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**Subject: Data Warehousing & Data Mining (BI) Class: MSC I**

**Academic Year: 2020-21 Roll No: 46**

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**Practical No 1**

**Aim: Creation of Dimensions and Fact tables.**

**Solution:**

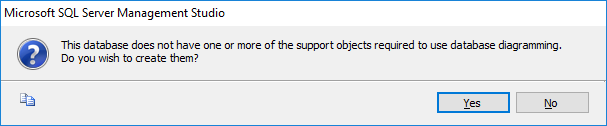
**Open Application -> Microsoft SQL Server 2008 R2 -> SQL Server Management Studio**

1. **Select Connect Tab -> Database Engine -> Select Server Name(local)**
2. **Right Click the Database -> New Database**
3. **Types “SalesInformation” as the database name, click on OK to close the dialog box and to create the database.**

**Create a Database Diagrams**

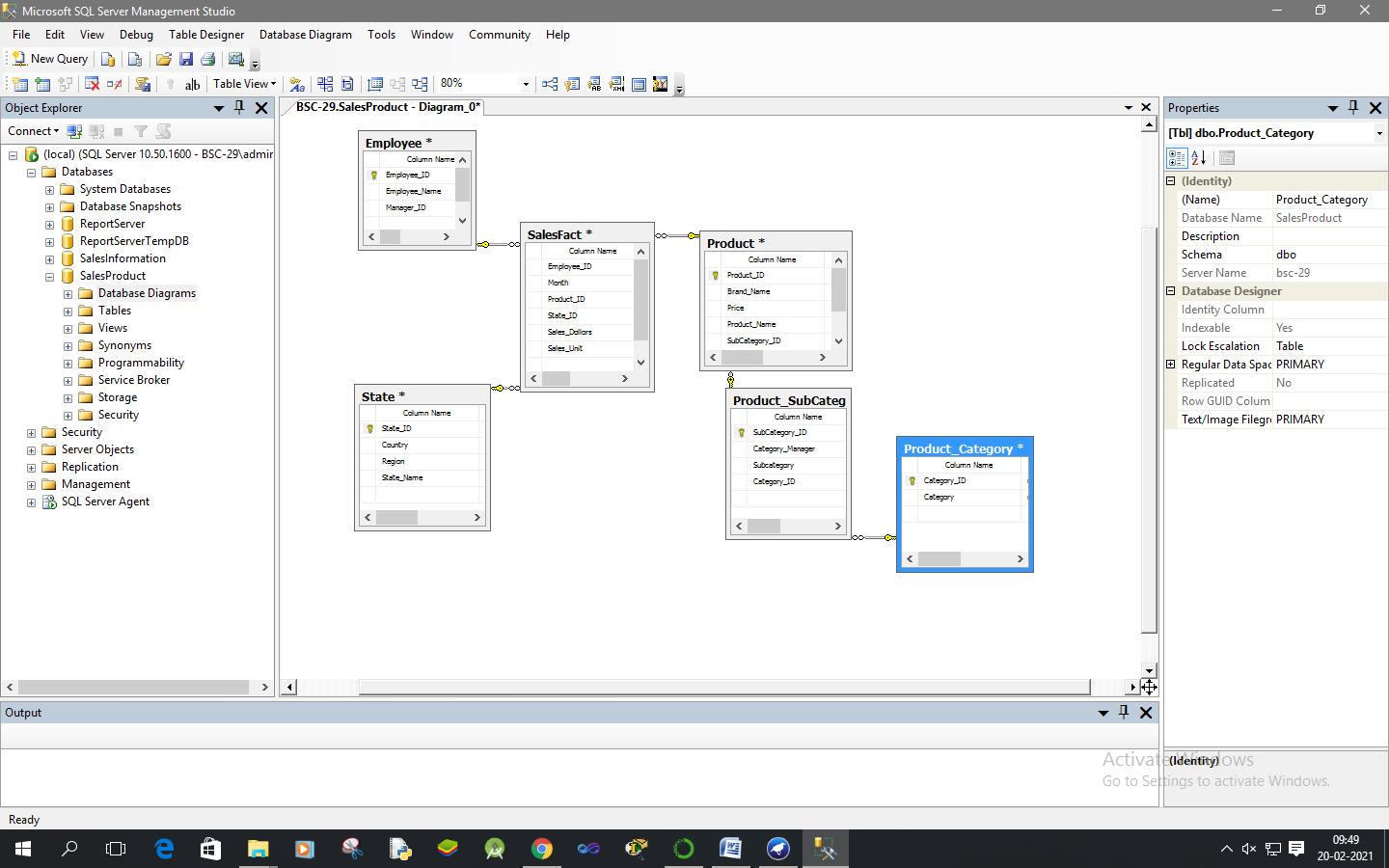
**Expand the “SalesInformation” database folder.**

1. **Click on Database Diagrams to expand it**

****

**On click of it, above Dialog box appears, click on Yes to close it.**

1. **Right Click on Database Diagrams -> New Database Diagrams**
2. **Create fact and Dimension Tables. (Right click on surface, choose New Table to add tables n Database Diagrams.)**



1. **Establish relationship between fact and dimension tables.**
2. **Save Database Diagrams with name as “SalesInfo”. (After saving Database Diagrams fact and dimension tables are automatically placed in Table tab.)**

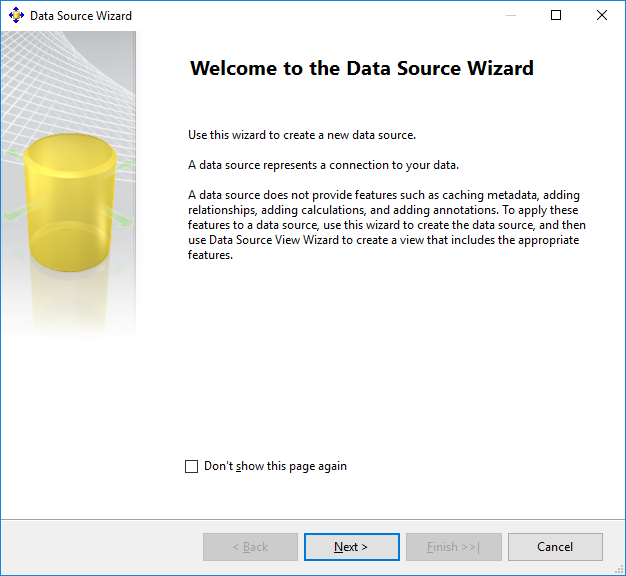
**Practical No 2**

**Aim: Create Data Source using SSAS(SQL Server Analysis Services.)**

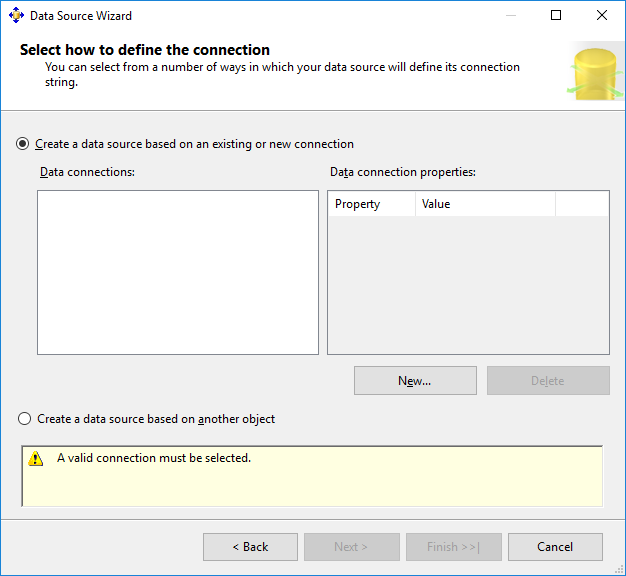
**Solution:**

**Open Application -> Microsoft SQL Server 2008 R2 -> SQL Server Business Intelligence Development Studio**

1. **Select File -> New Project -> Choose Analysis Service Project -> Name it as “SalesInfo\_BIPrj” and click on OK.**
2. **Right Click on Data Sources -> New Data Source**

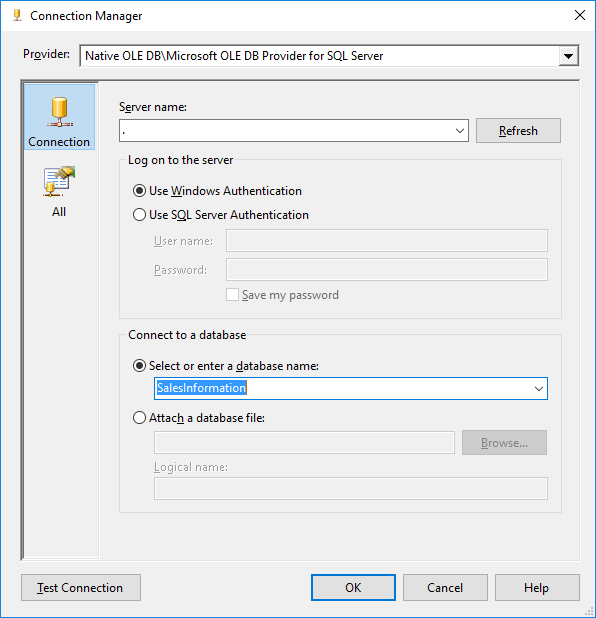
****

**Click on Next.**

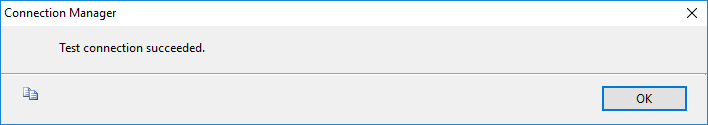
****

**Click on New.**

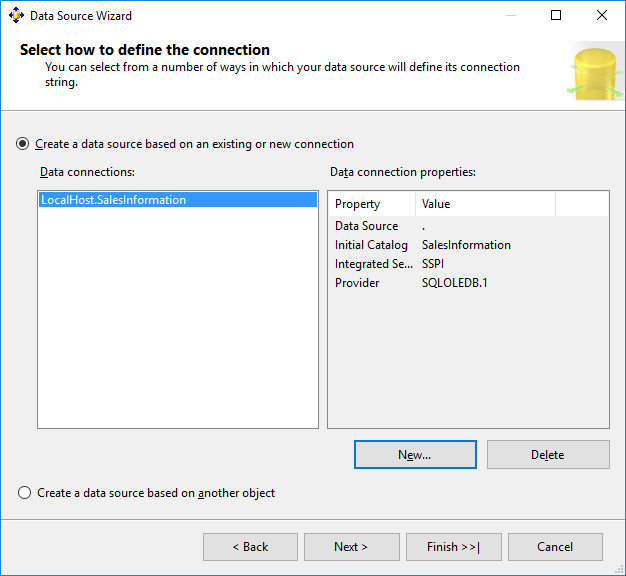
1. **Choose Provider as “Microsoft OLEDB Provider for SQL Server” , Server Name as “.”, Select database name as “SalesInformation”.(Created in SQL Server Management studio).**

****

1. **Click on Test Connection.**

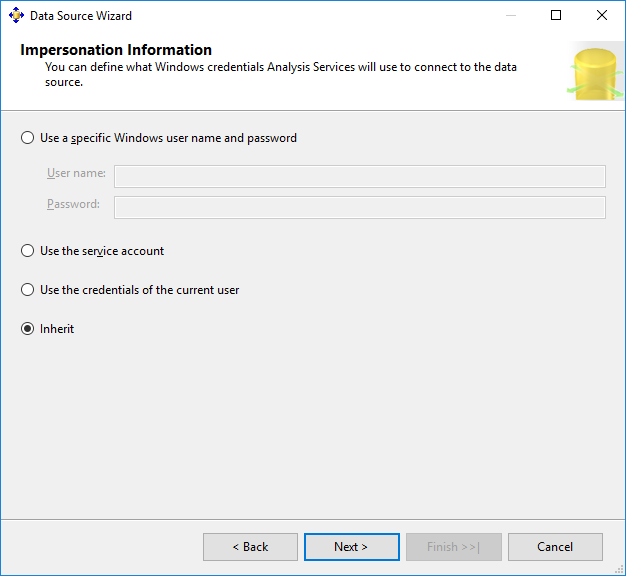
****

**Click on OK.**

****

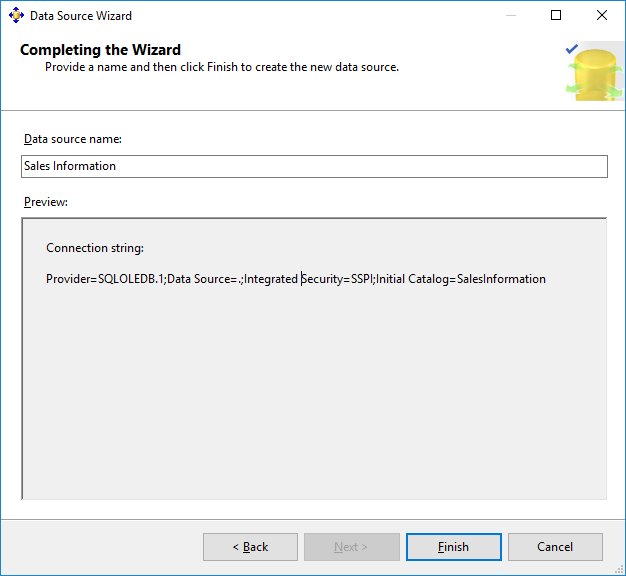
**Click on Next**

1. **Choose “Inherit” option.**

****

**Click on Next.**

1. **Click on Finish.**

****

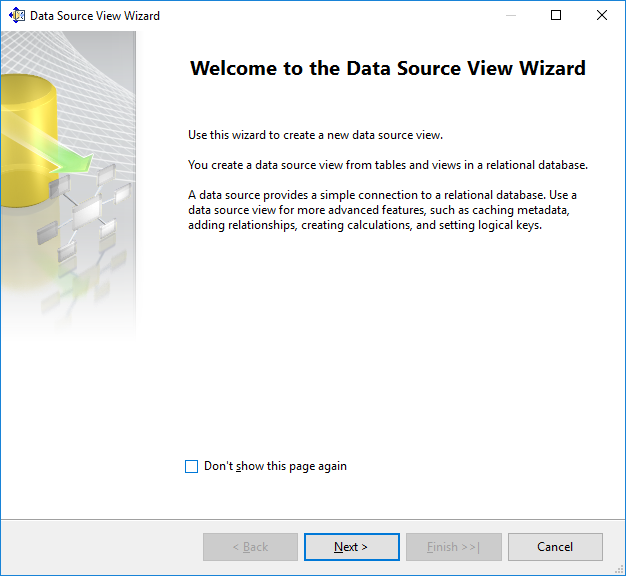
**Name Data Source as “Sales Information”.**

**Practical No 3**

**Aim: Create Data Source View using SSAS (SQL Server Analysis Services.)**

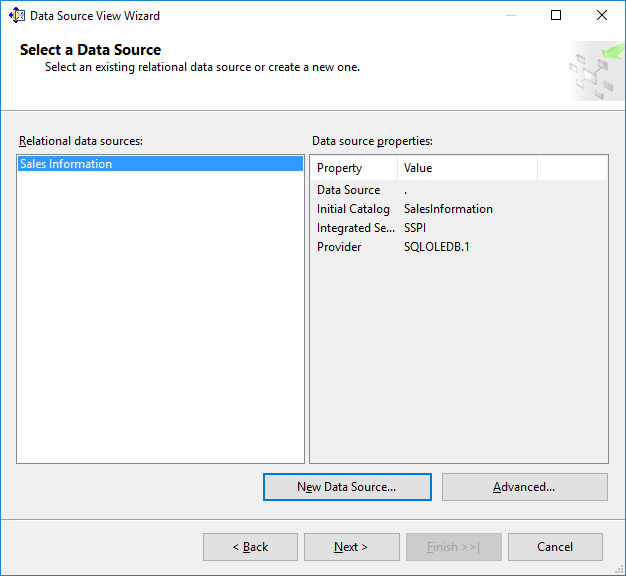
**Solution:**

1. **Right click on Data Source View -> New Data Source View**

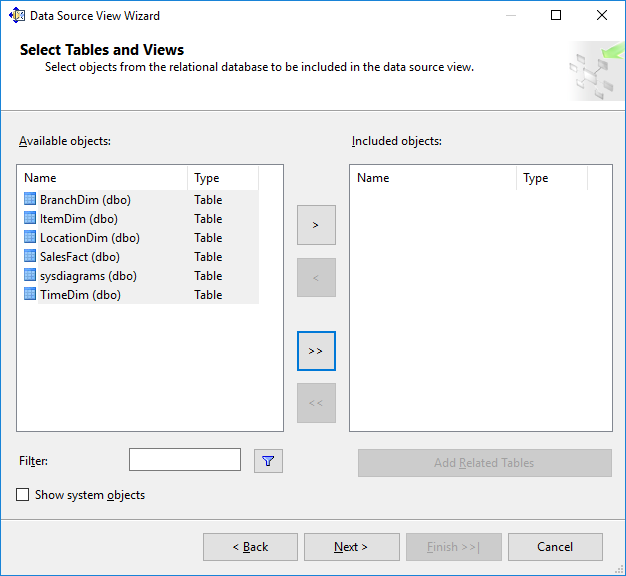
****

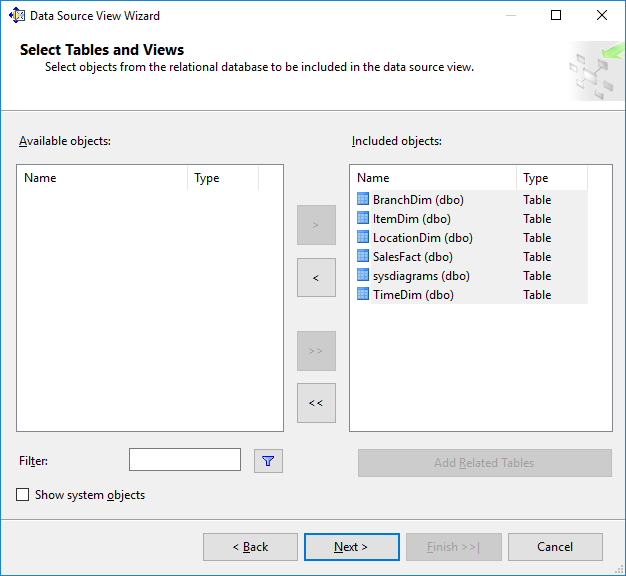
**Click on Next.**

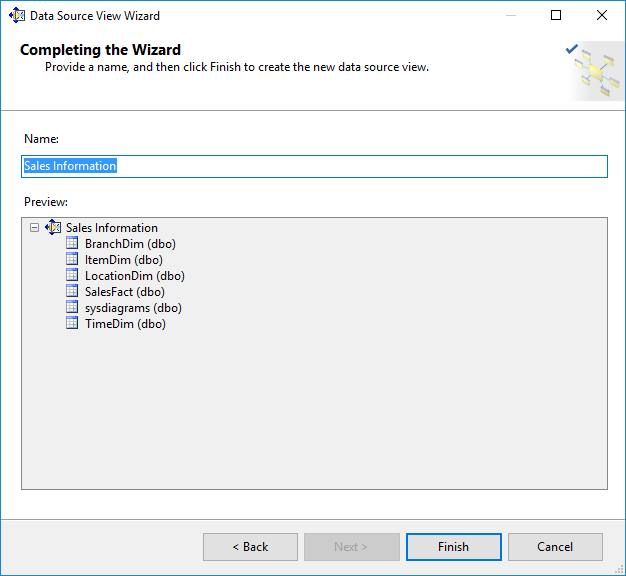
1. **Click on Next.**

****

1. **Select Tables and Views.**

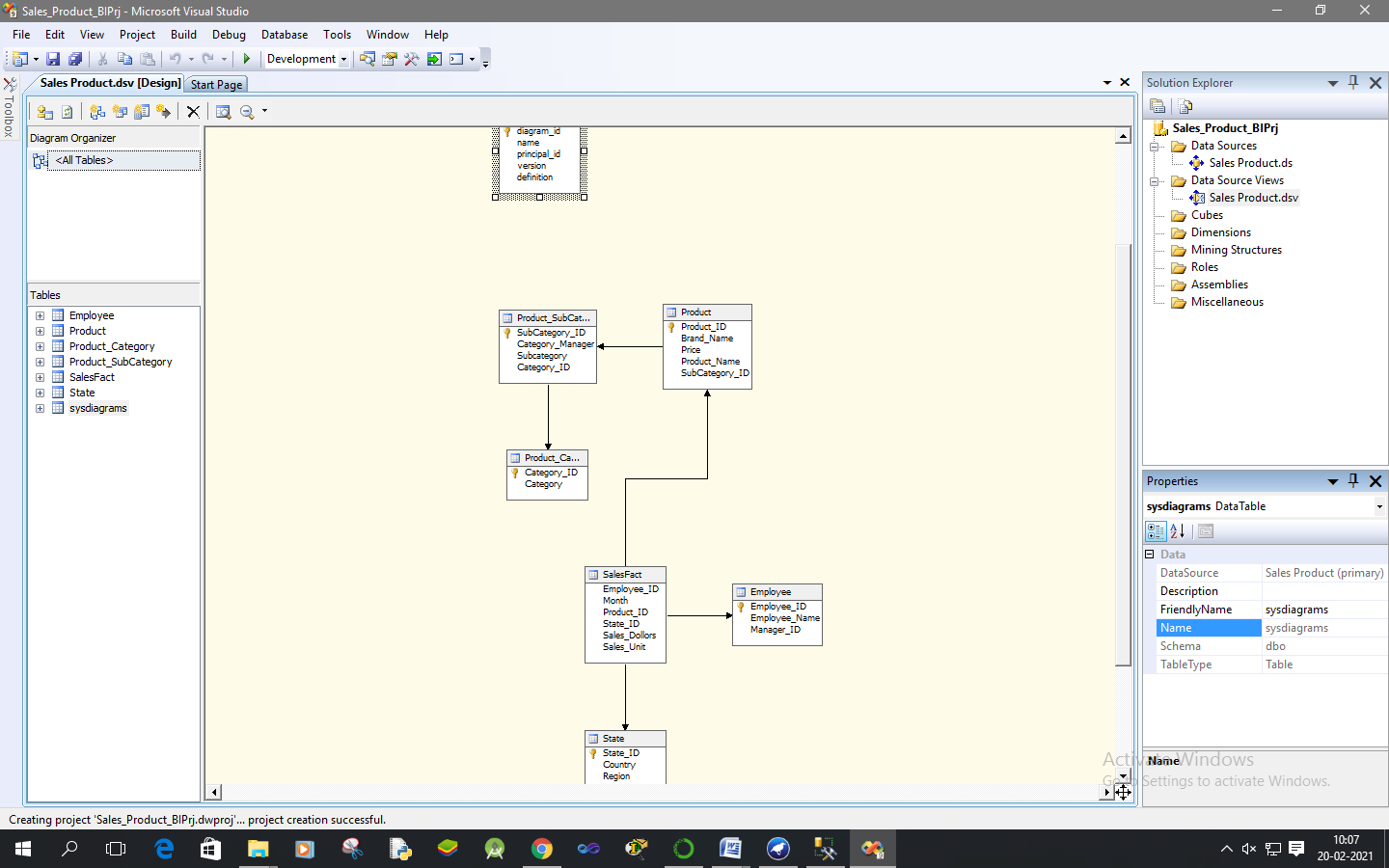
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**Click on Finish.**

1. **Finally, we will get the Data Source View like :**

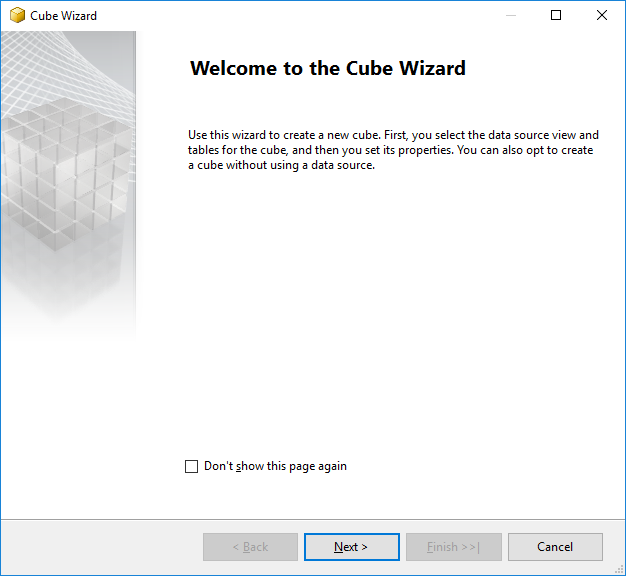


**Practical No 4**

**Aim: Create cube using SSAS (SQL Server Analysis Services.) and process the cube.**

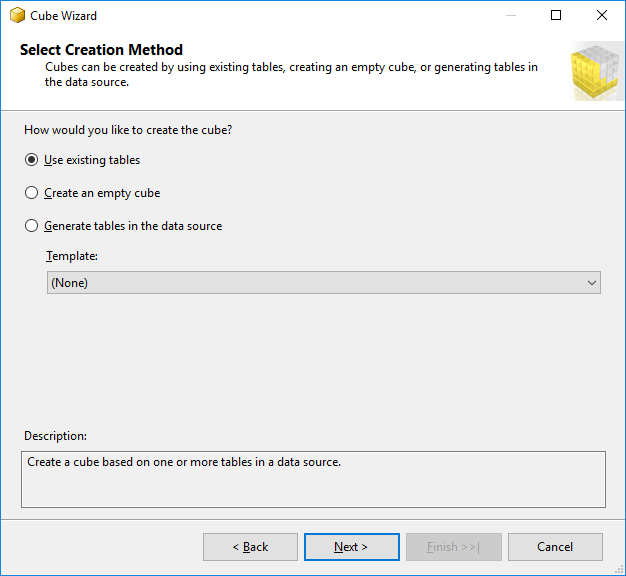
**Solution:**

1. **Right click on Cubes -> New Cube.**

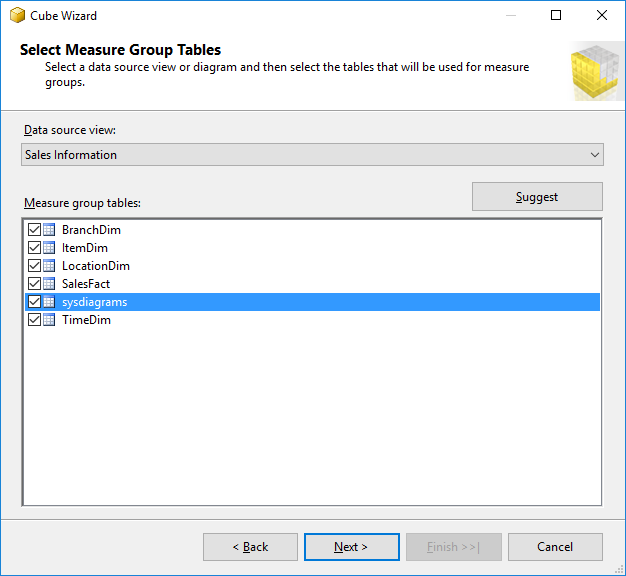


**Click on Next.**

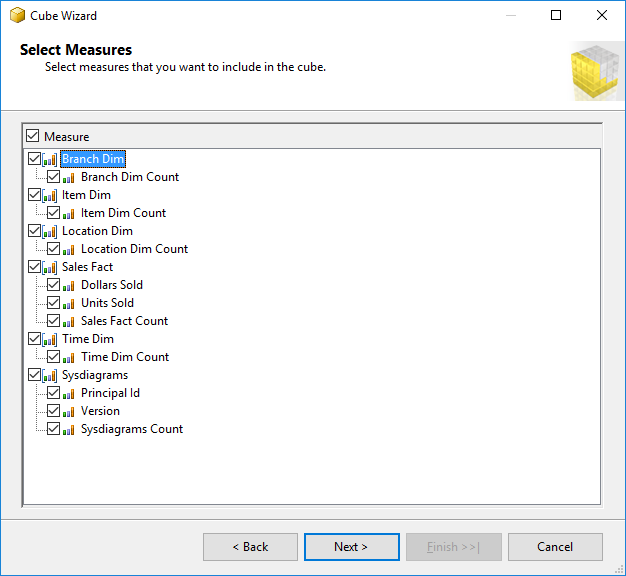
1. **Select First option “Use existing tables”. Click on Next.**



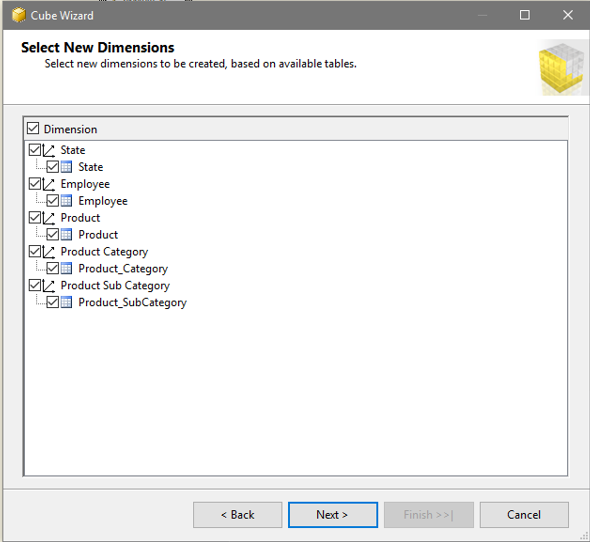
1. **Select Data Source View as “Sales Information” and Select all the tables.**



**Click on Next.**

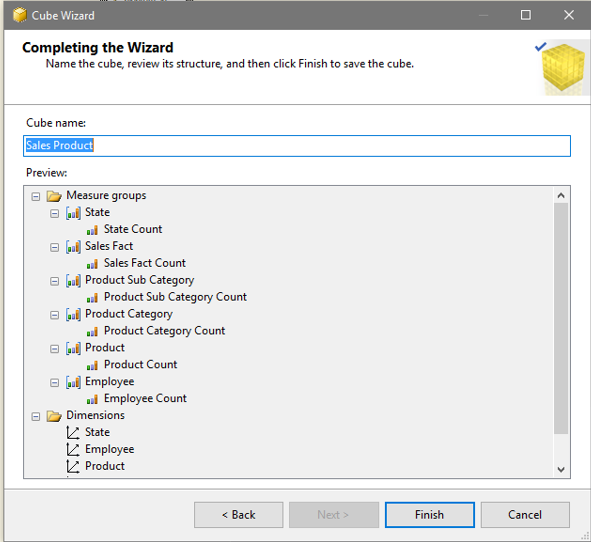
****

**Click on Next.**



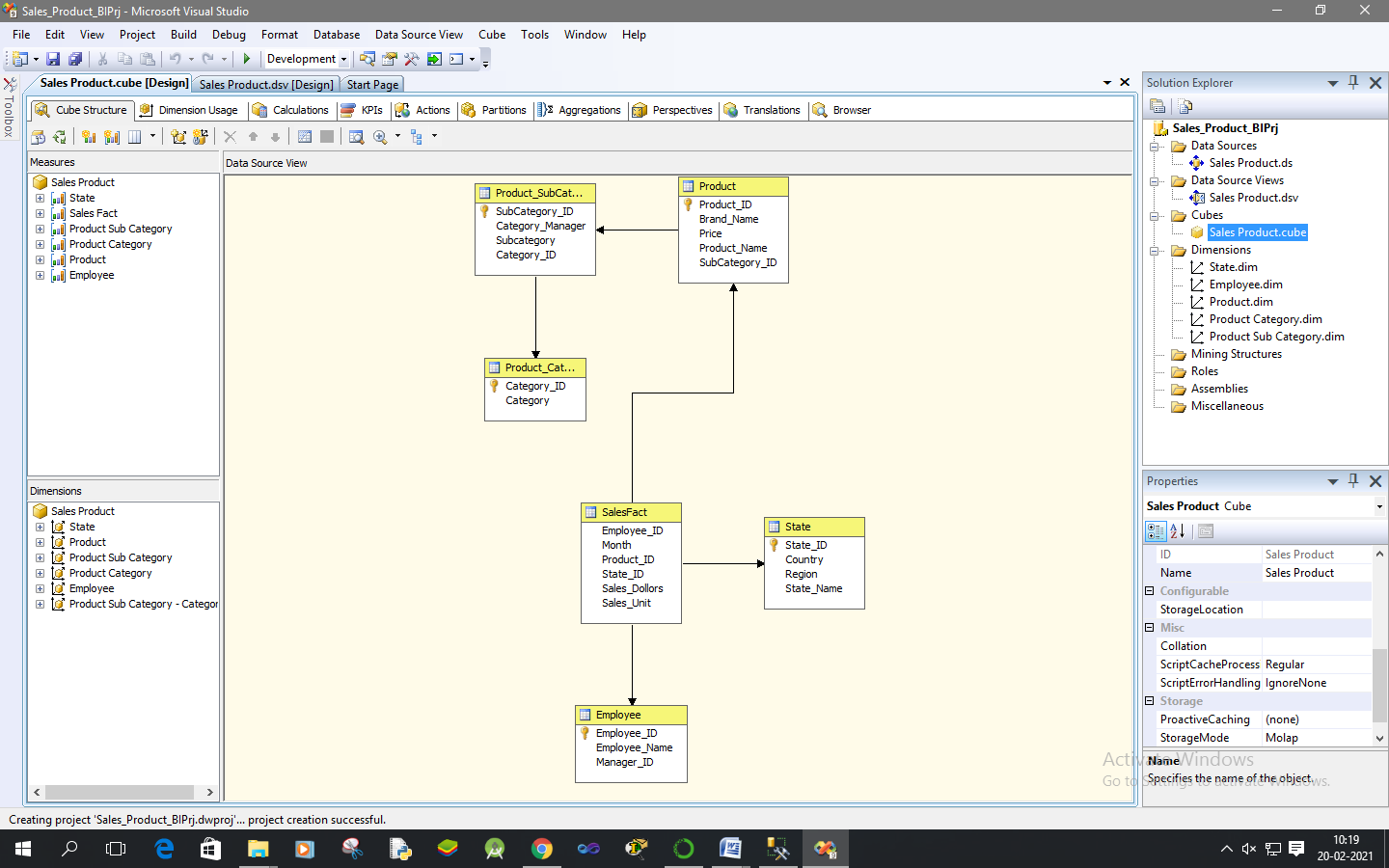
**Click on Next.**

1. **Name Cube as “SalesProduct”.**

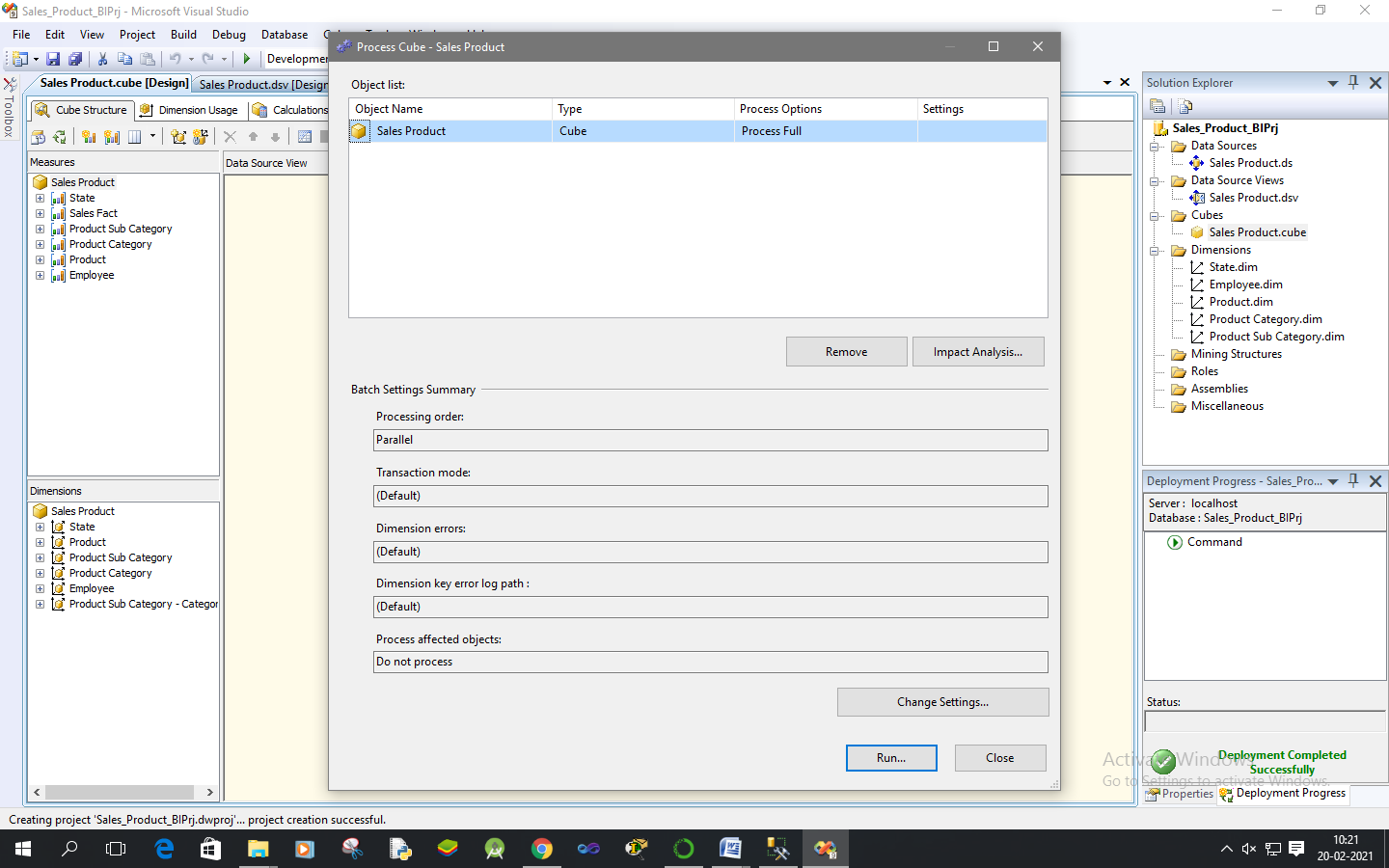


**Click on Finish.**

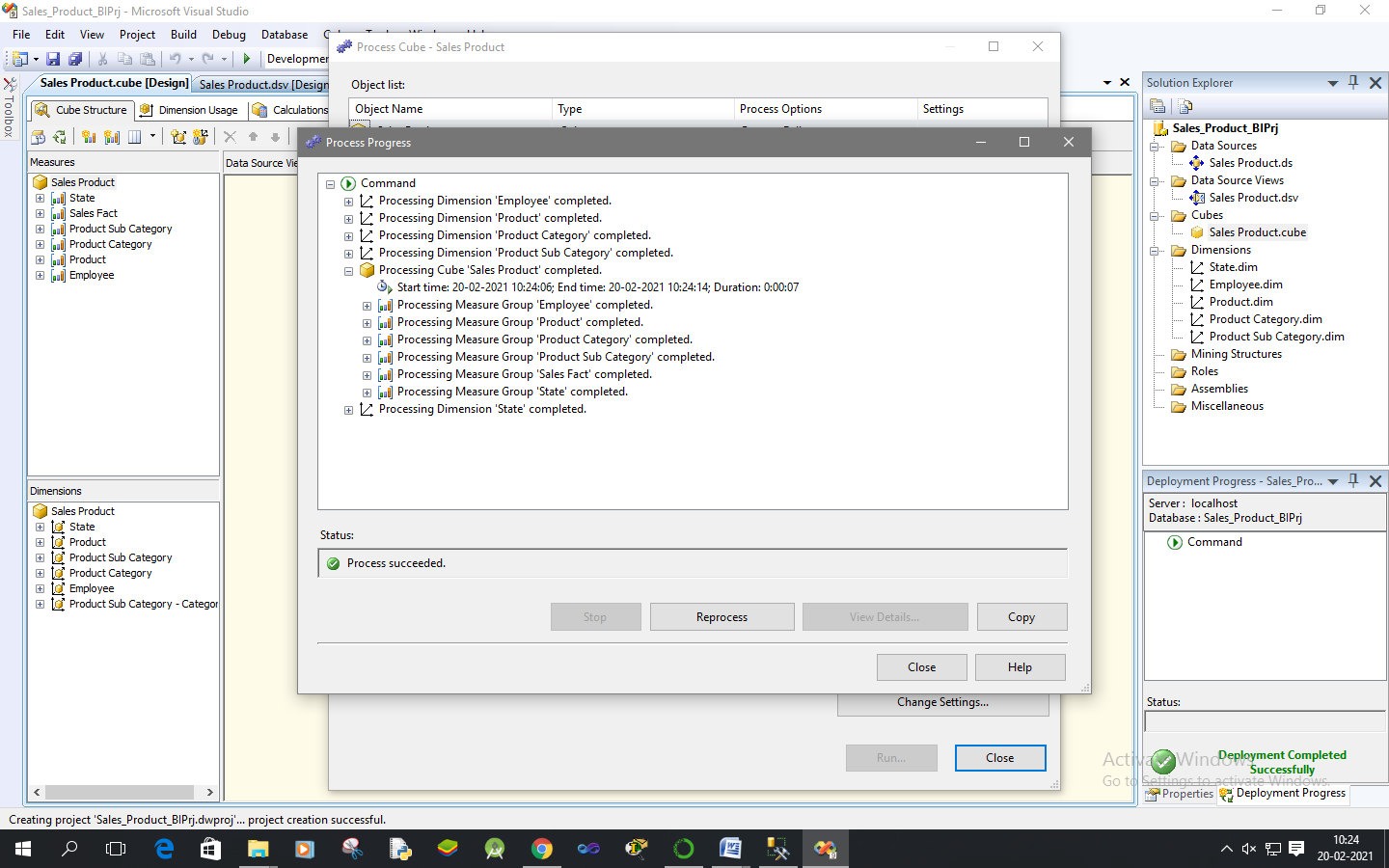
1. **Finally, we will get the Cube View as well Dimensions View like :**



1. **Finally, Process cube by Right click on SalesProduct -> Process.**



1. **Click on Run.**

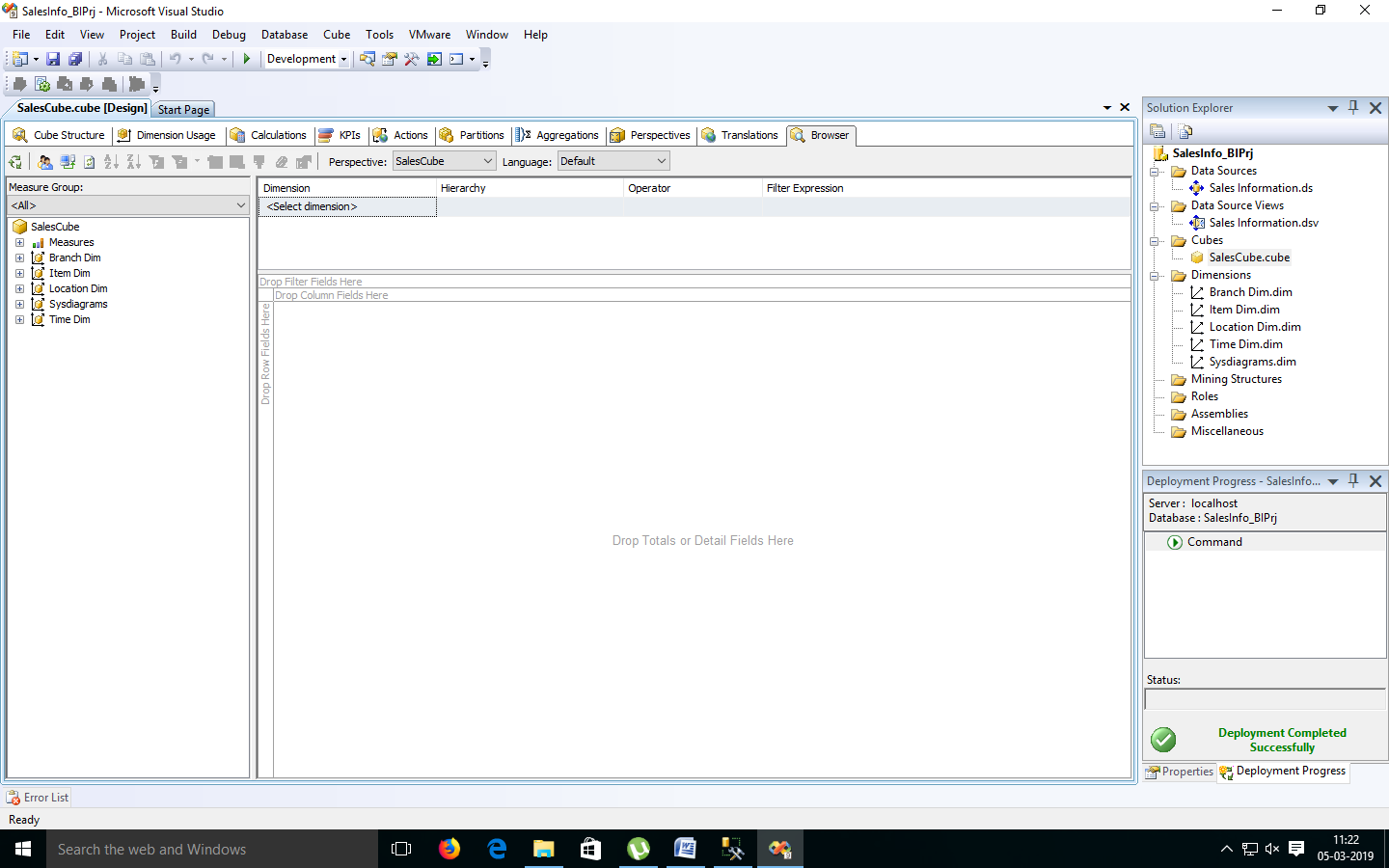


**Practical No 5**

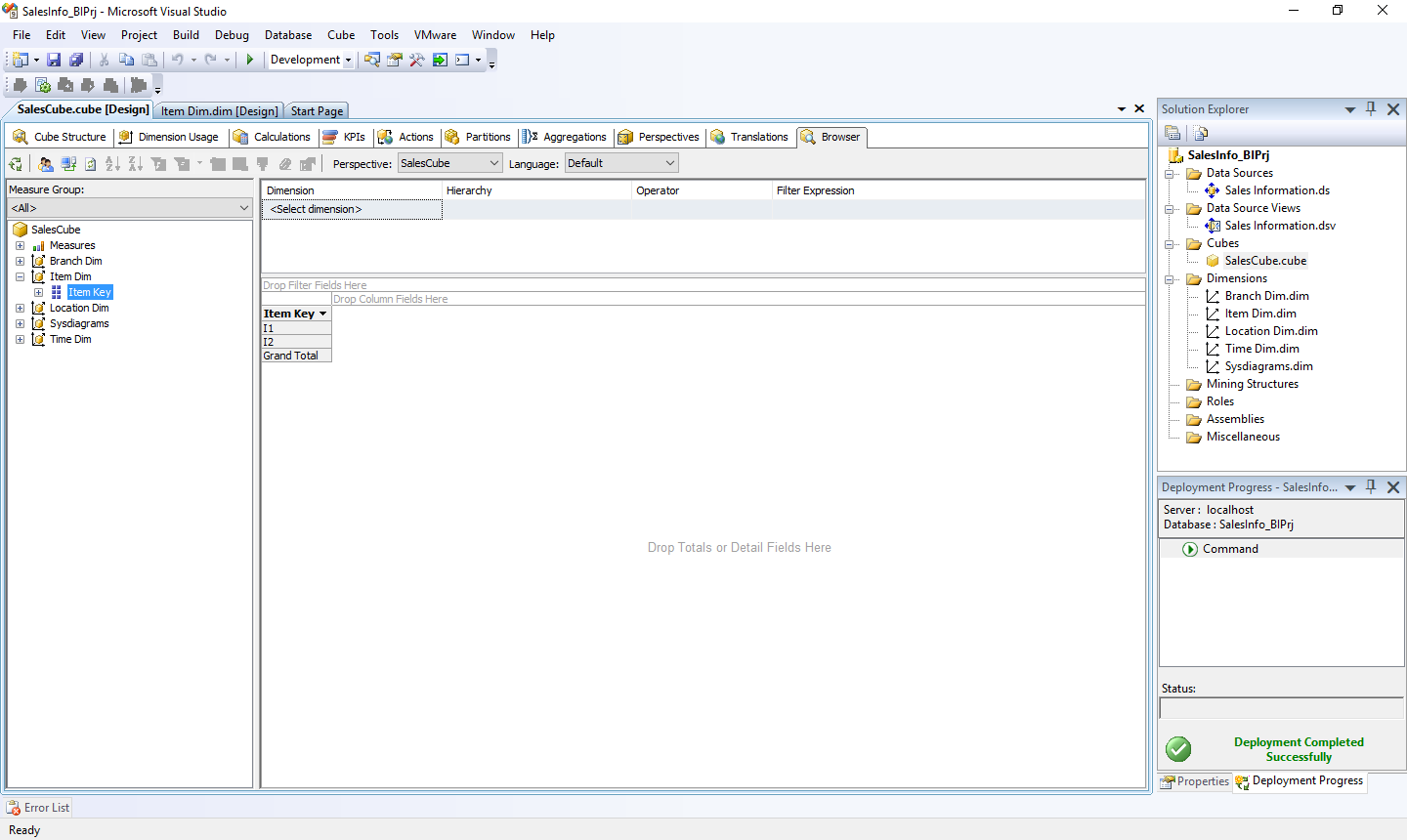
**Aim: View cube data in multidimensional Format.**

**Solution:**

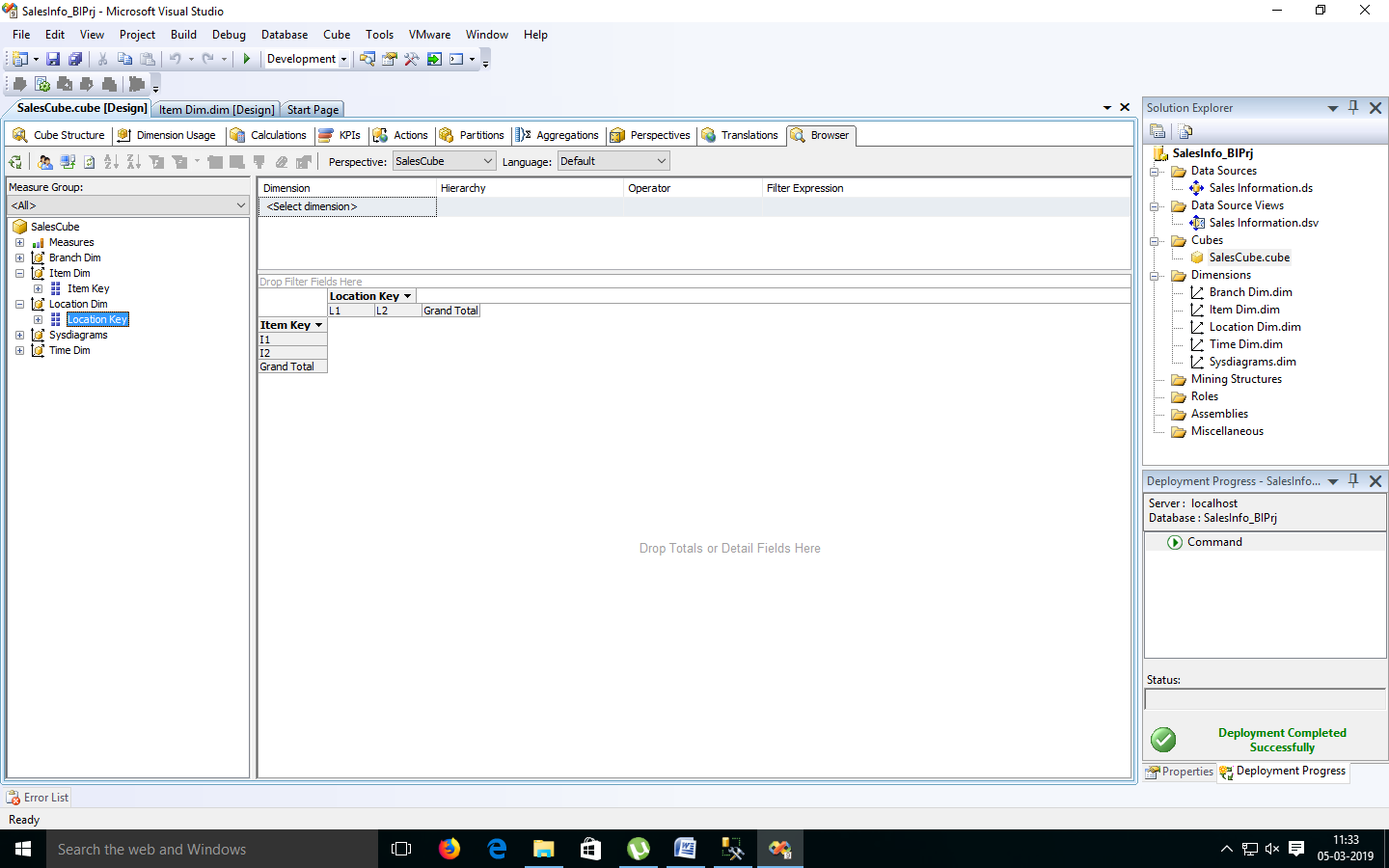
1. **Double Click on “SalesProduct”. Go to the “Browser” Tab.**

****

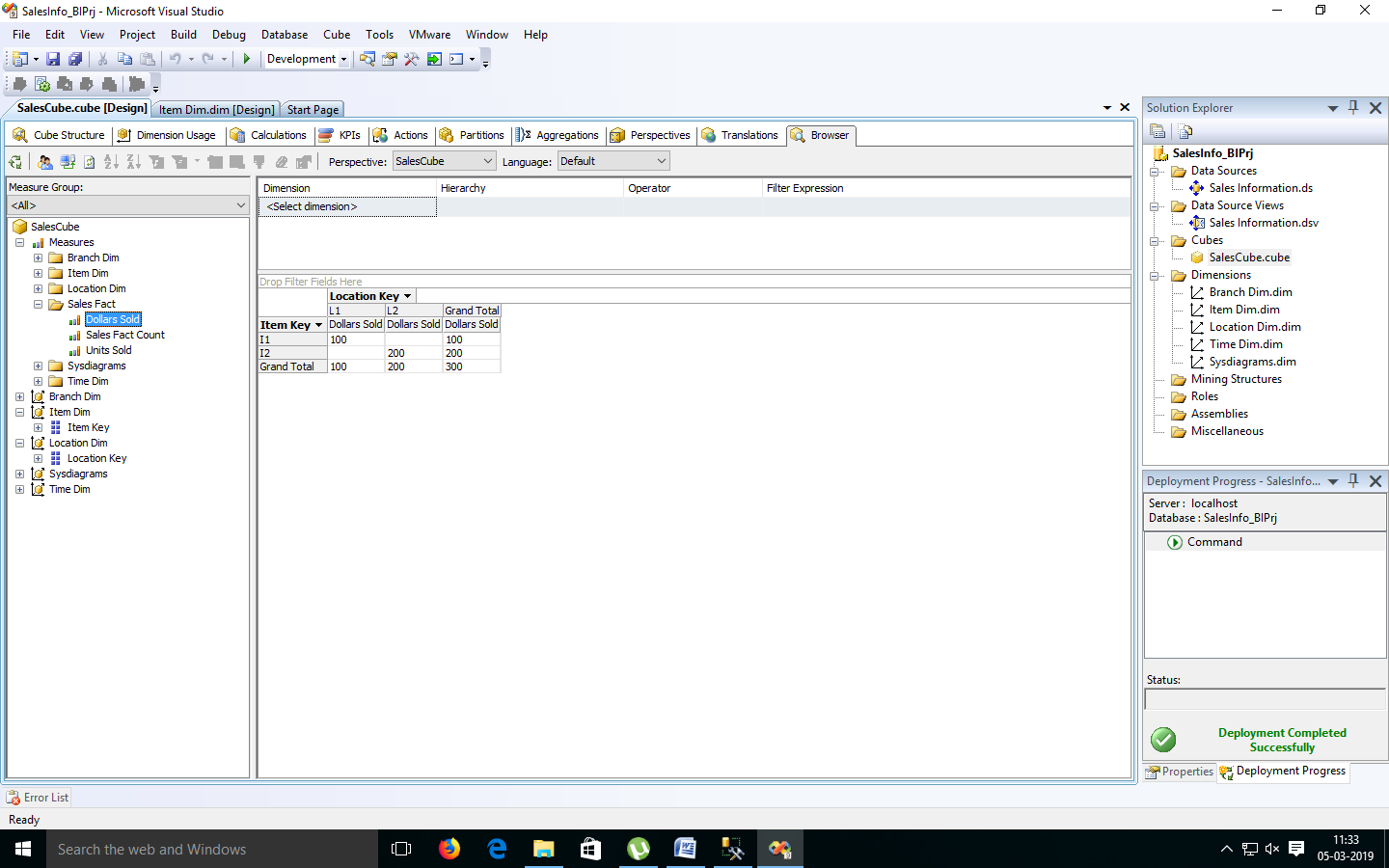
1. **Go to the “Item Dimension”. Right Click on ‘Item Key’ -> Add to Row Area.**



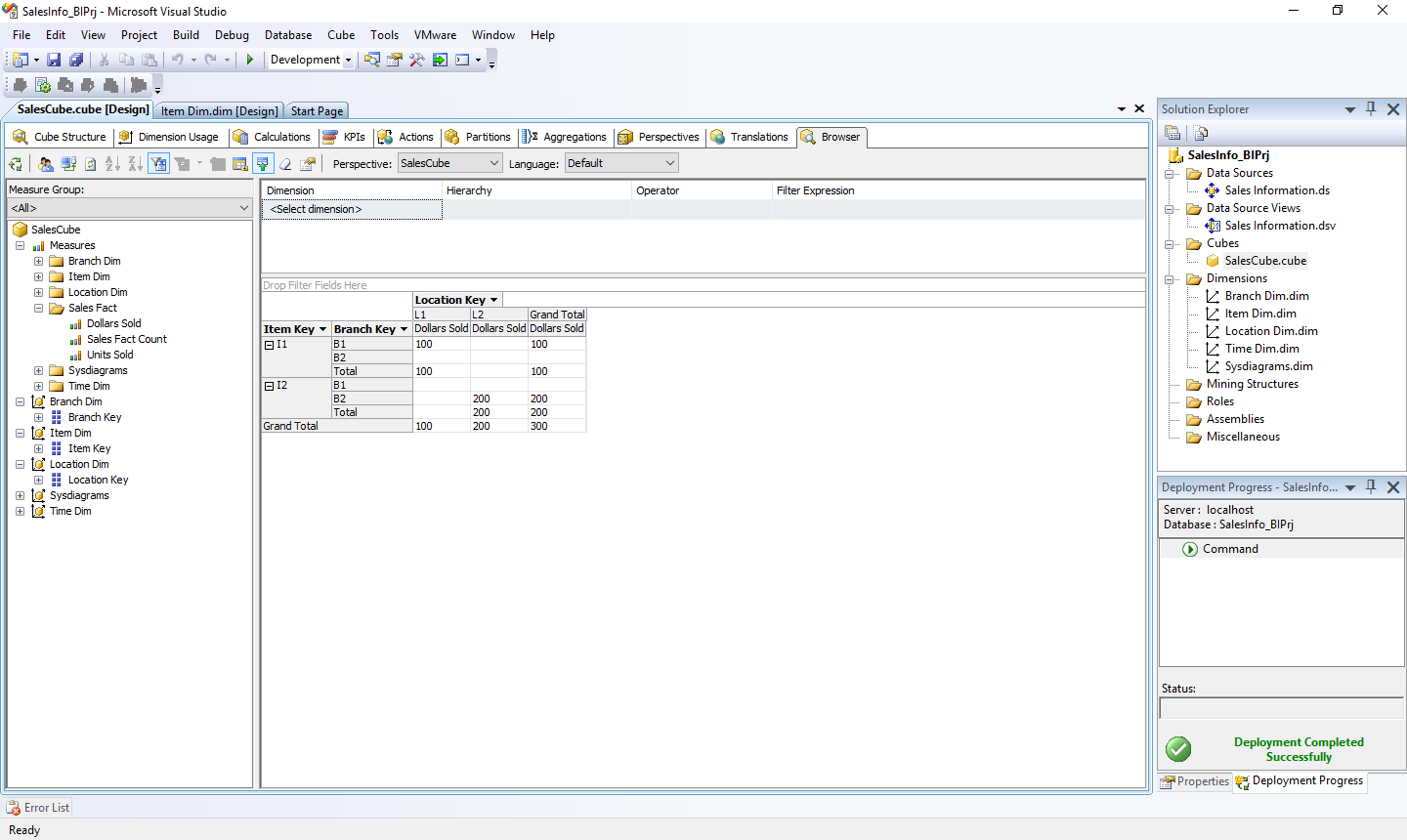
1. **Go to the “Location Dimension”. Right Click on ‘Location Key’ -> Add to Column Area.**

****

1. **Go to ‘Measures’. Select ‘SalesFact’ -> Right Click on “Dollars Sold” -> Add to Data area.**

****

1. **Go to the “Branch Dimension”. Right Click on ‘Branch Key’ -> Add to Row Area.**

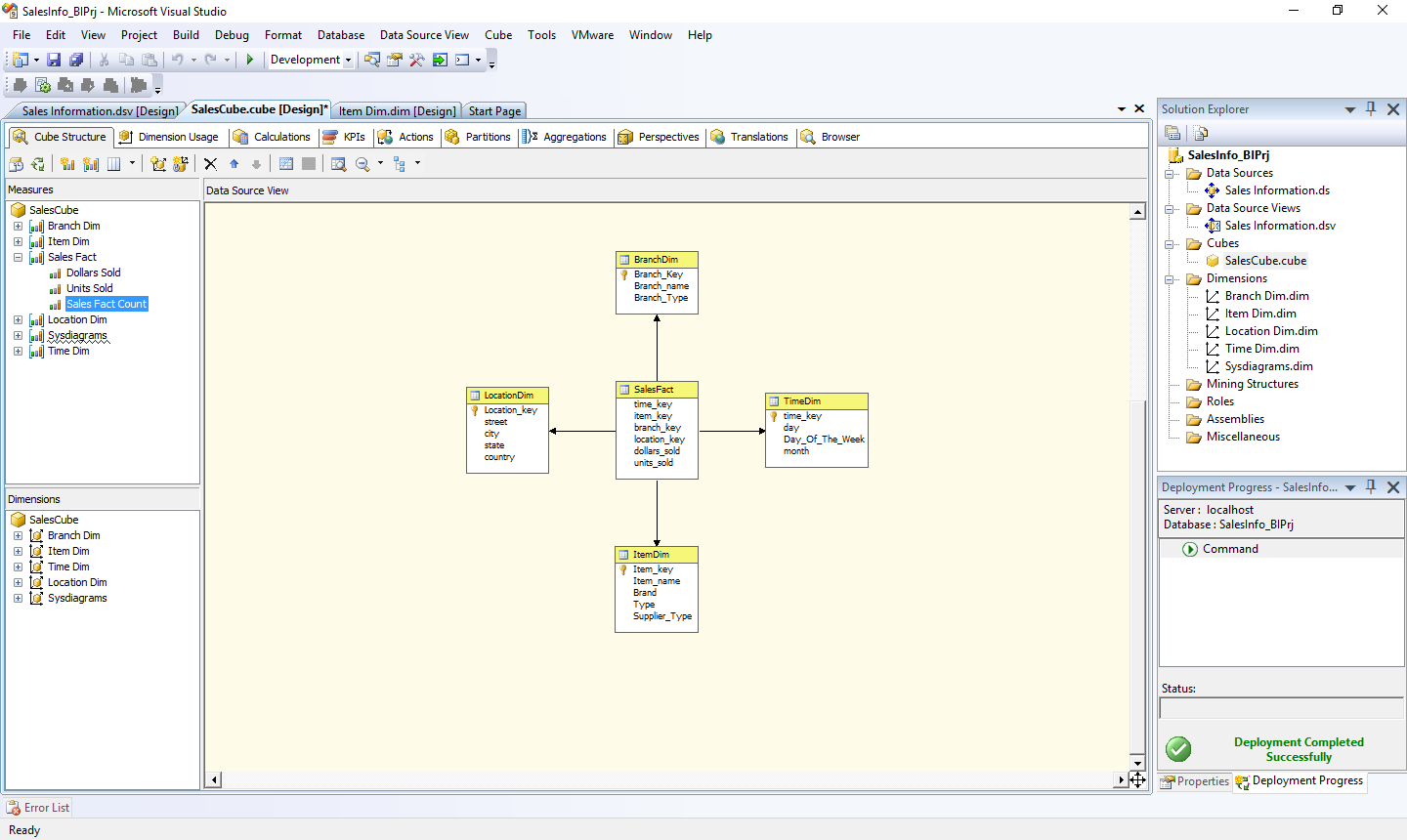


**Practical No 6**

**Aim: Working with measures in the cube.**

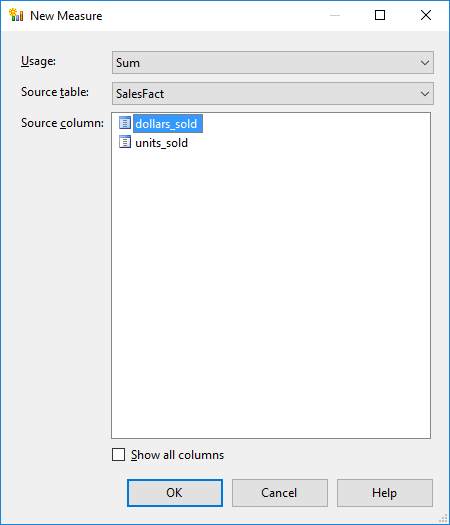
**Solution:**

1. **Double click on ‘SalesCube’. Go to cube structure.**

****

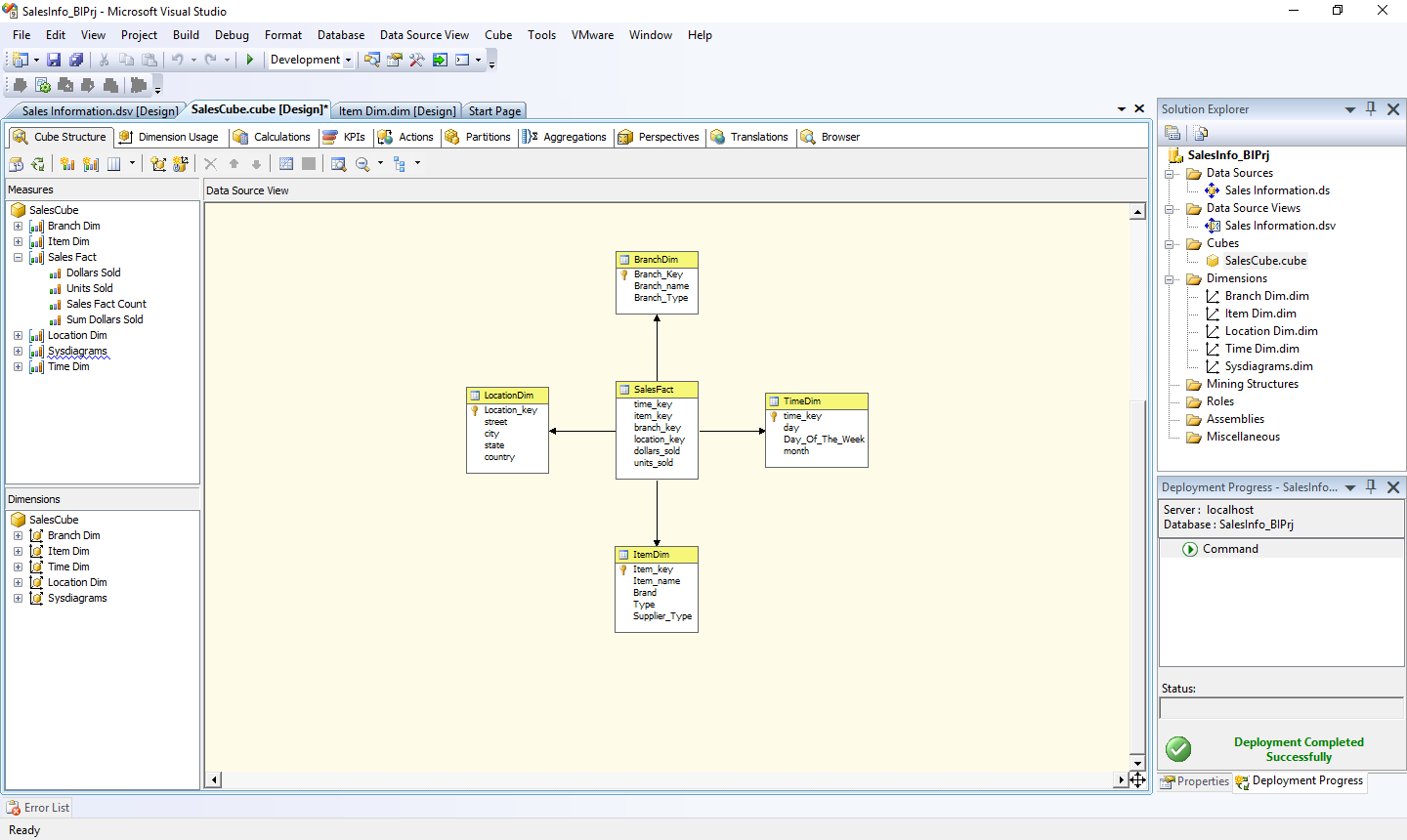
1. **Right click on SalesCube -> New Measure.**

**Select Usage = “Sum”, Source table = “SalesFact” and Source Column = “dollars\_sold”.**

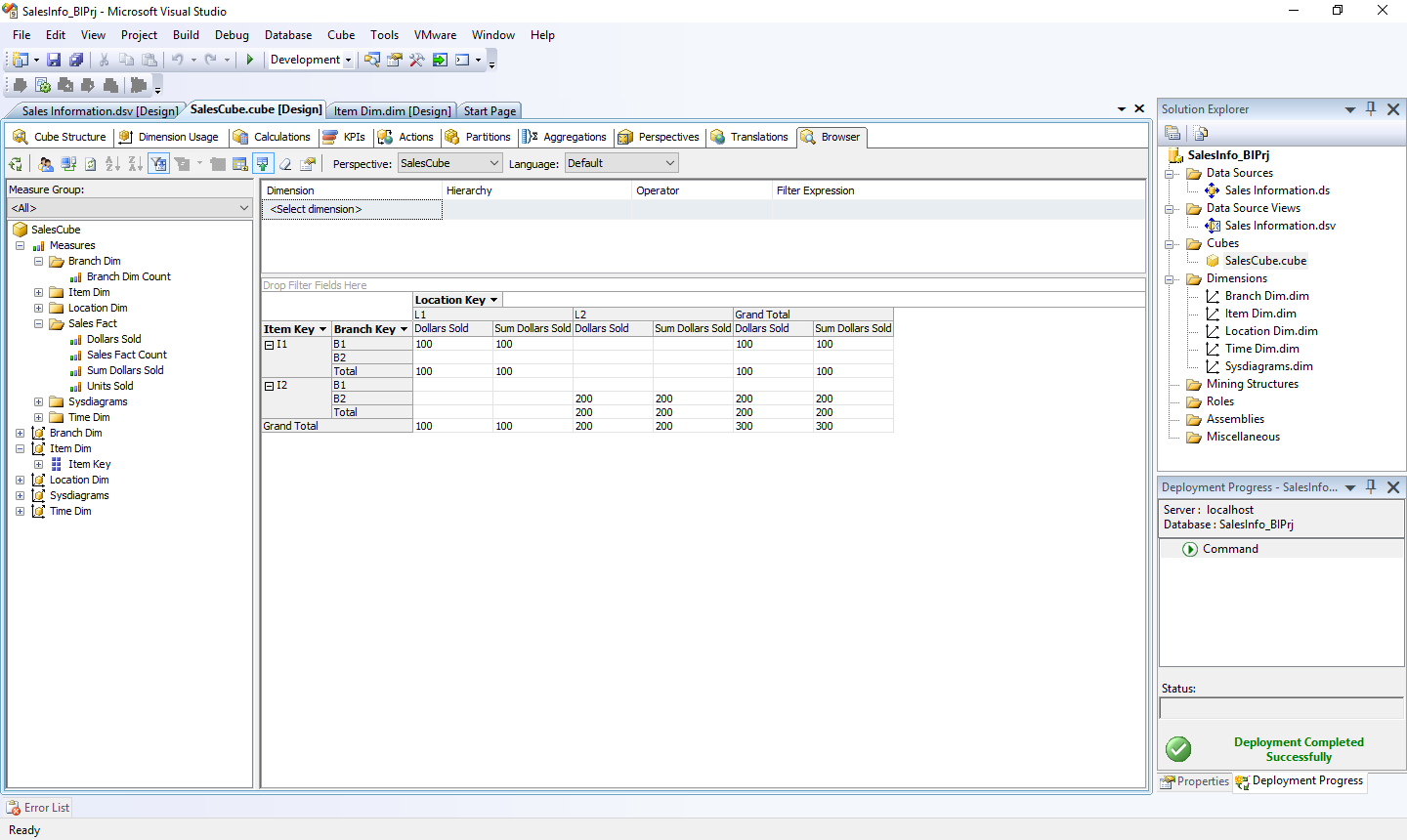
****

**Click on OK.**

1. **Rename Measure as “Sum Dollars sold”.**



1. **Process Cube and Go to Browser and Reconnect it. Right Click on “Sum Dollars Sold” -> Add to Data Area.**

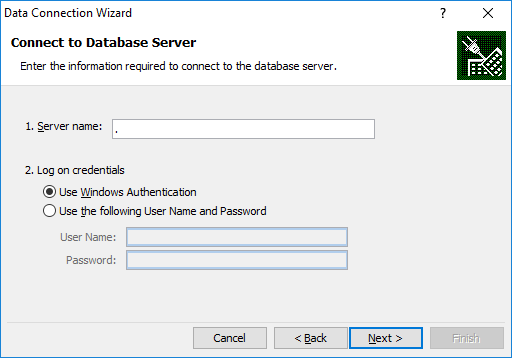
****

**Practical No 7**

**Aim: Creating an Excel Pivot Table and Pivot Chart by using the OLAP cube data.**

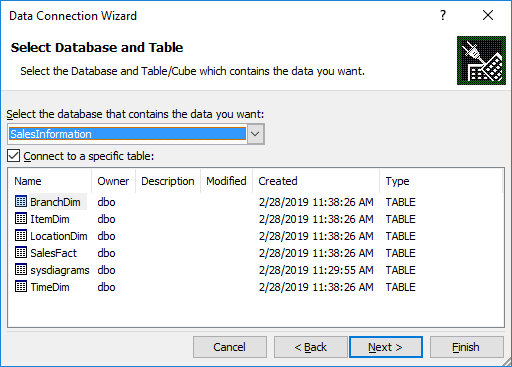
**Solution:**

1. **Open MS-Excel. Click on Data Menu.**
2. **Go to From Other Sources.**
   1. **From SQL Server -> Type Server name as “.”**

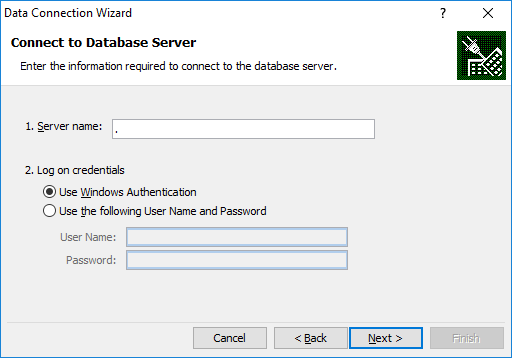
****

**Click on Next.**

**Choose SQL Database -> “SalesInformation”**

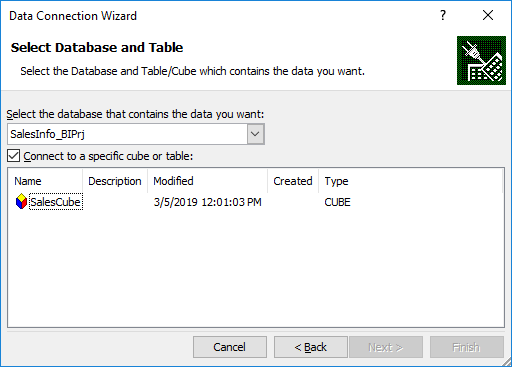
****

* 1. **From Analysis Services -> Type Server name as “.”**

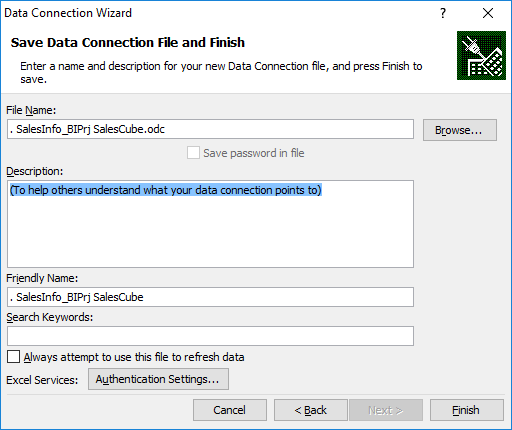


**Click on Next.**

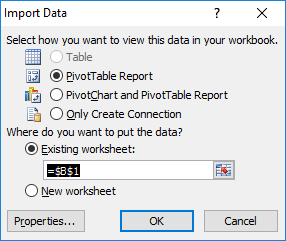
**Choose Analysis Database as “SalesInfo\_BIPrj”. Click on Next.**

****

**Click on OK**

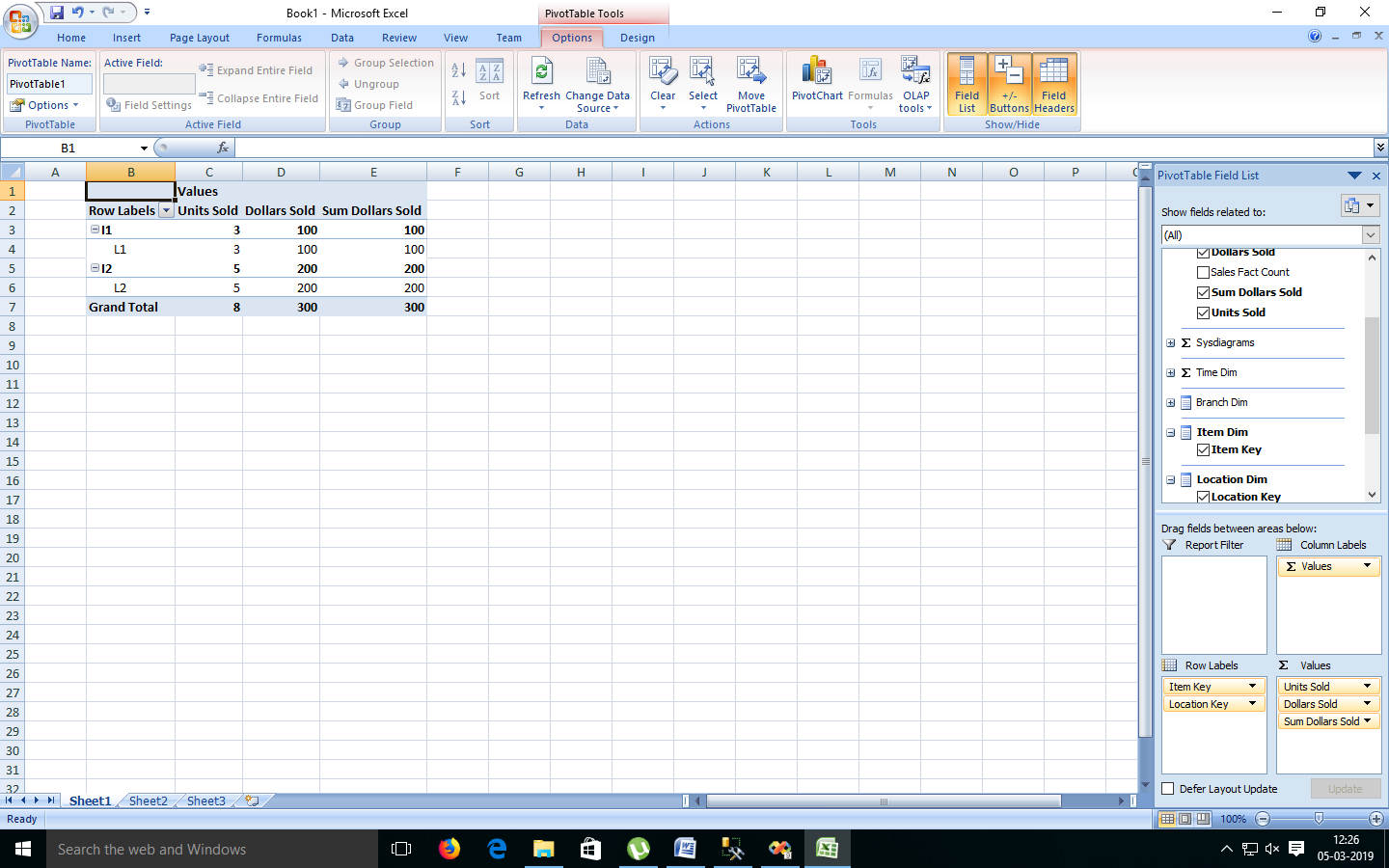
****

**Click on Finish.**

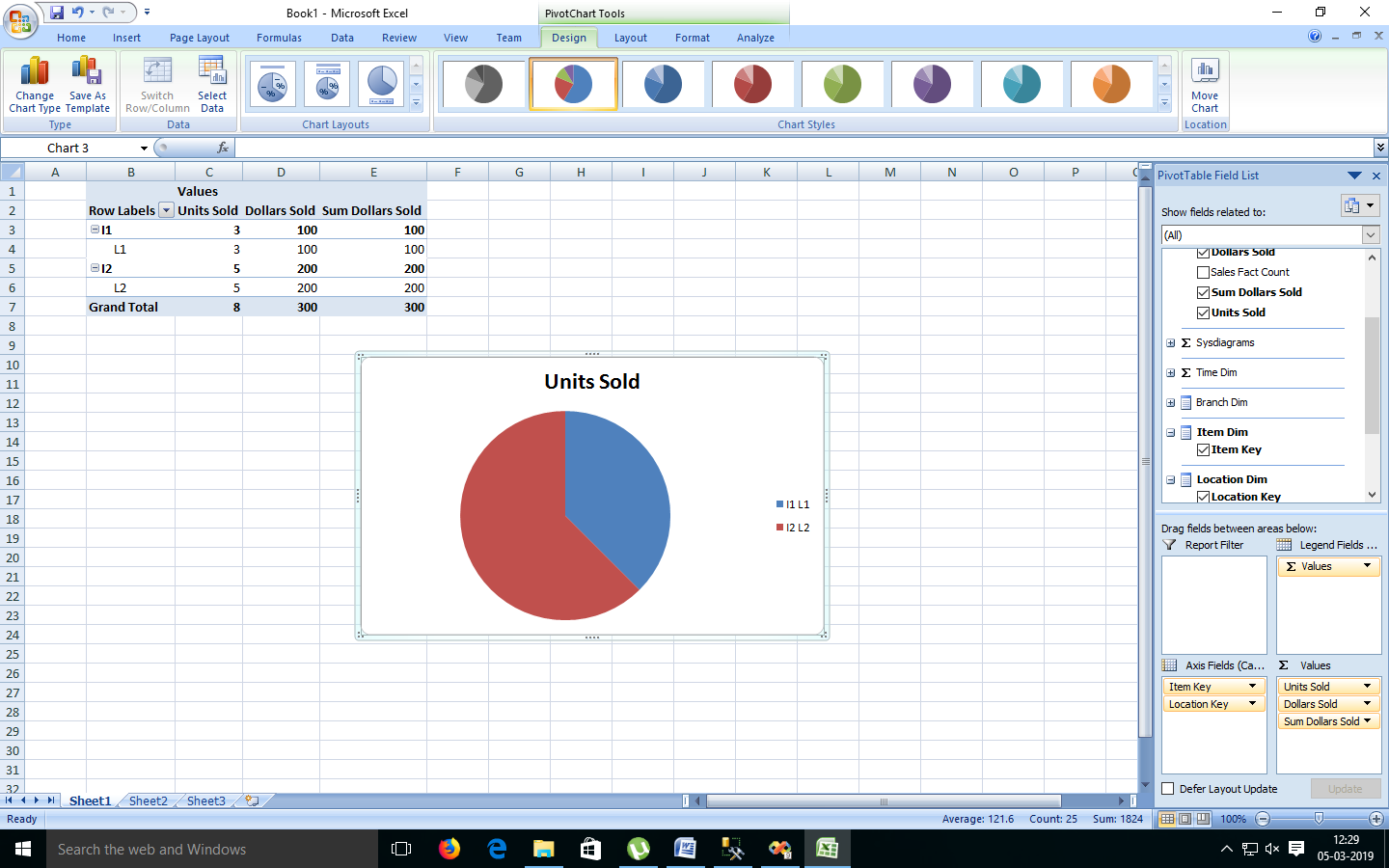
****

**Click on OK.**

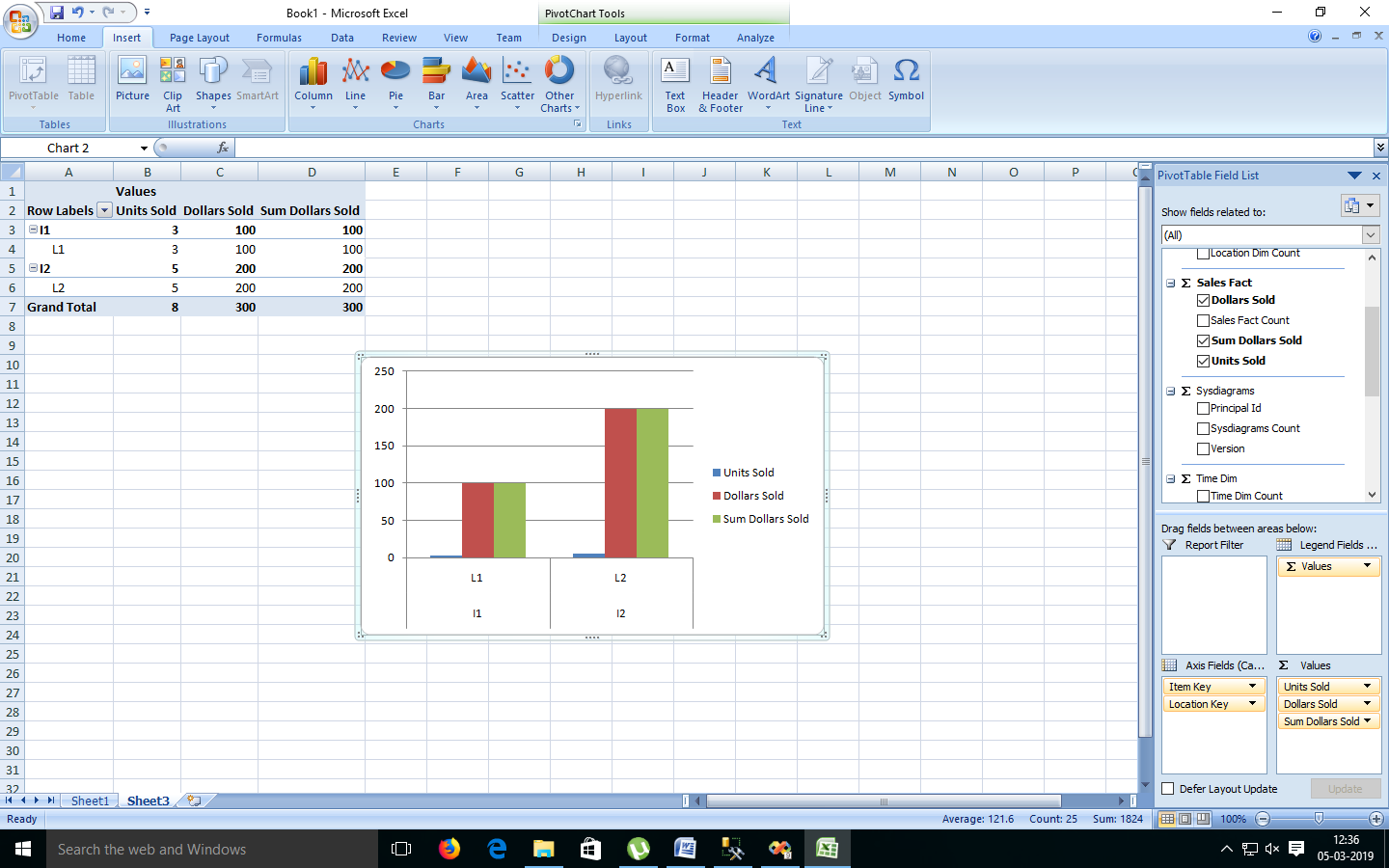
1. **Select Item Key, Location Key and Measures as Dollars Sold, Units Sold and Sum Dollars Sold**

****

1. **Select Result Area. Go to Insert Menu. Select Pie Chart option.**

****

1. **Select Result Area. Go to Insert Menu. Select Column option.**

****

**Practical No 8**

**Aim: Firing Queries on Tables.**

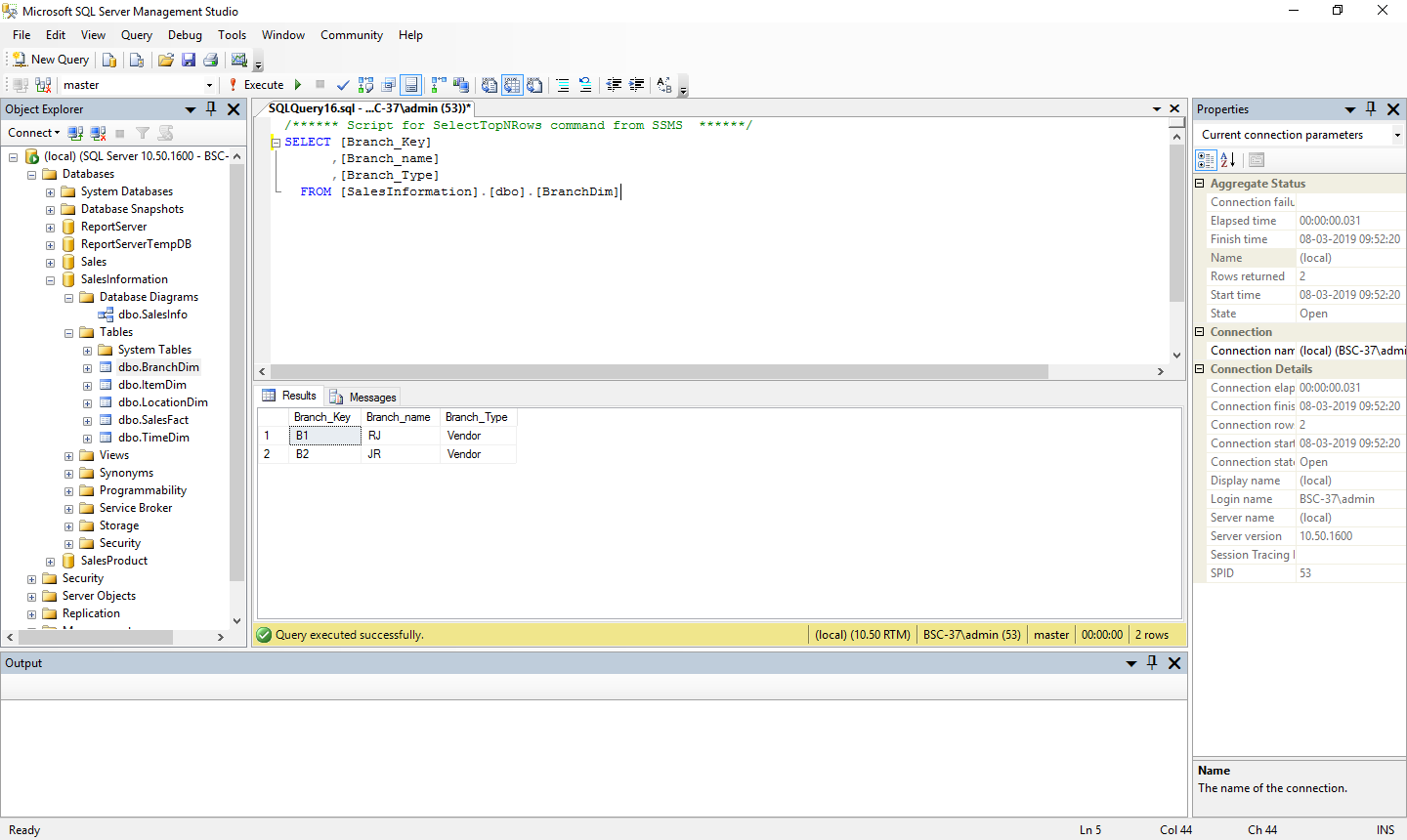
**Solution:**

**Open Application -> Microsoft SQL Server 2008 R2 -> SQL Server Management Studio**

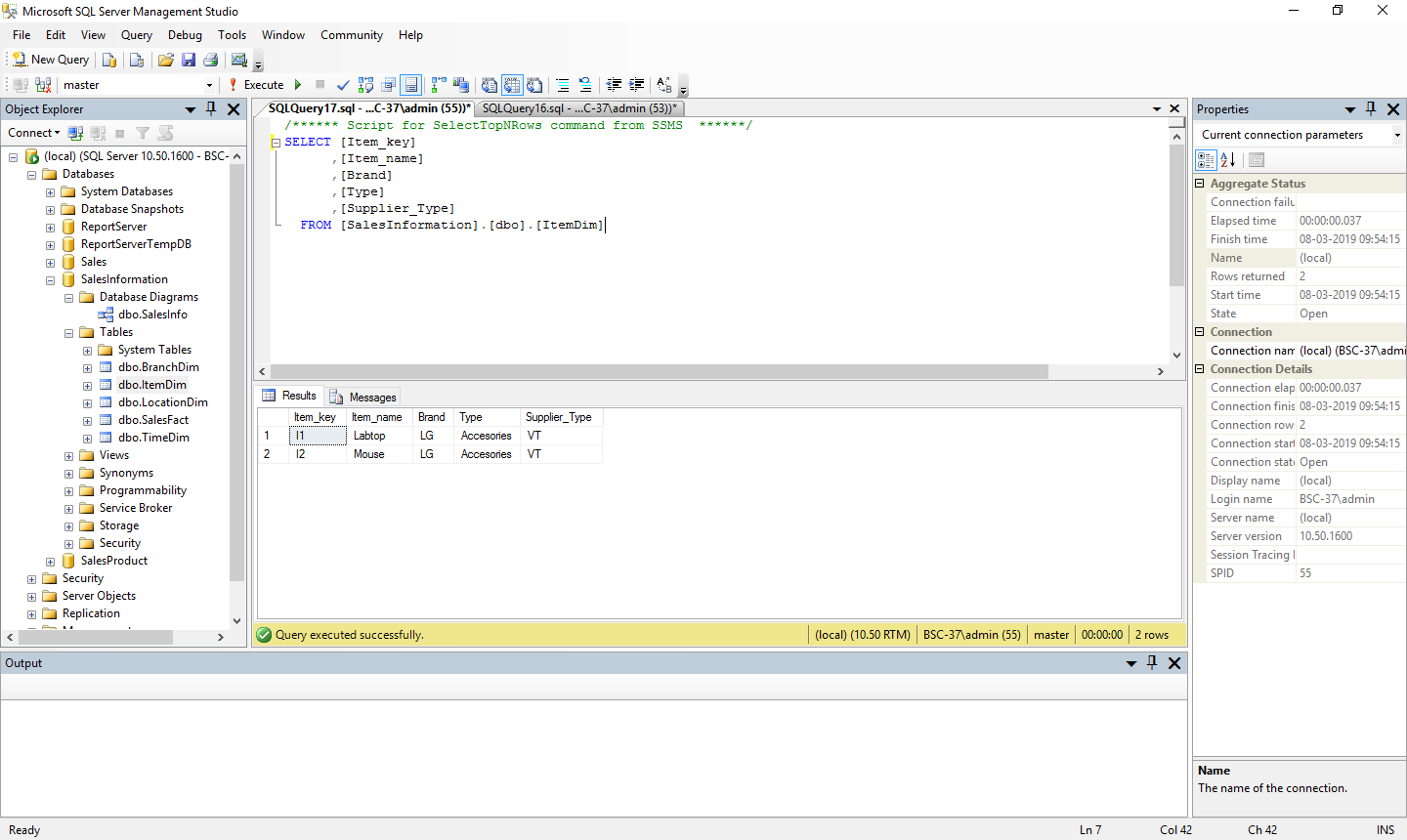
1. **Select Connect Tab -> Database Engine -> Select Server Name(local)**
2. **Expand ‘Database’ -> Expand ‘SalesInformation’ -> Expand Tables.**
3. **Fire following queries :**

**3.1.** SELECT [Branch\_Key],[Branch\_name],[Branch\_Type]

FROM [SalesInformation].[dbo].[BranchDim]

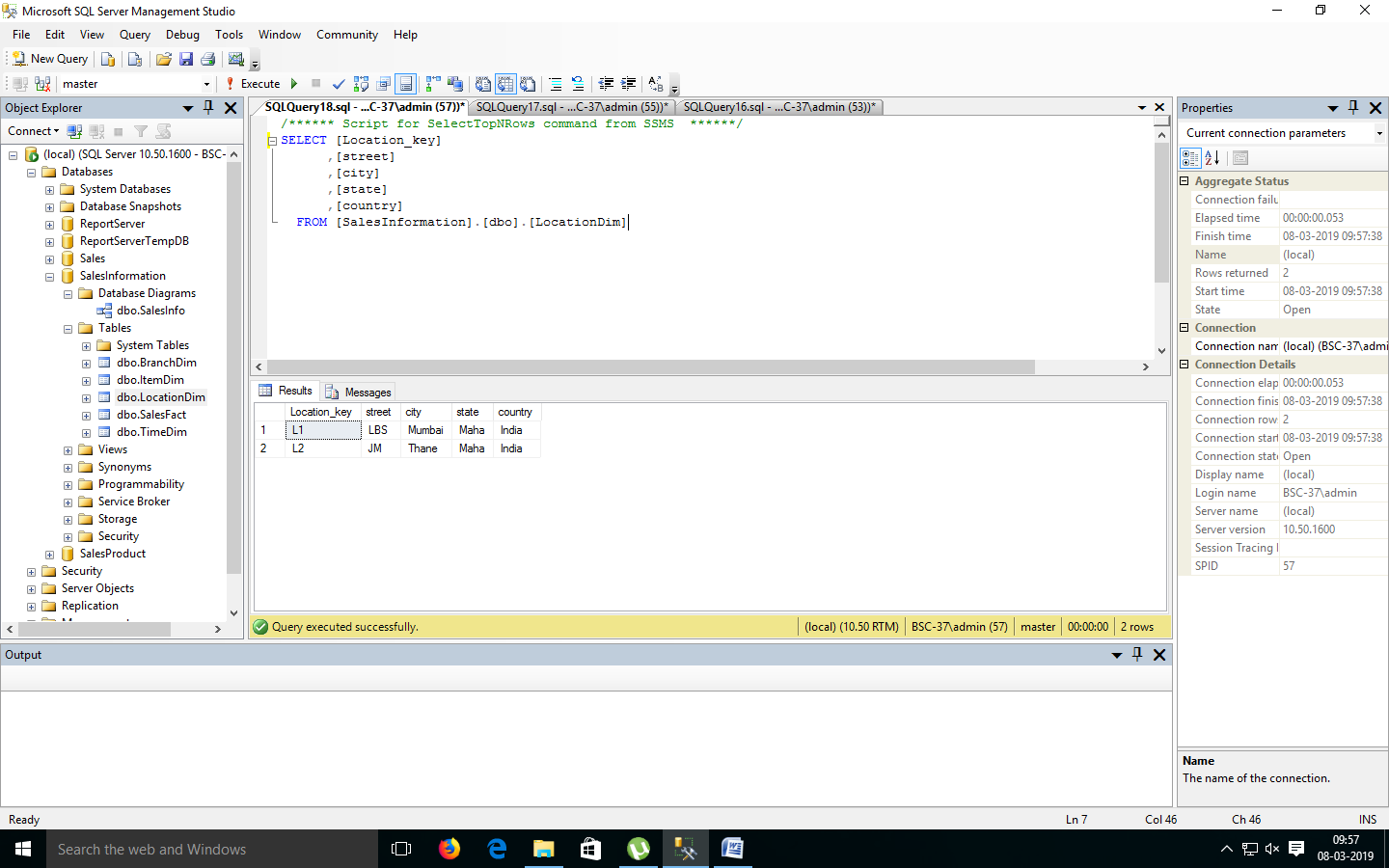
****

**3.2.** SELECT [Item\_key],[Item\_name],[Brand],[Type],[Supplier\_Type]

FROM[SalesInformation].[dbo].[ItemDim]****

**3.3.** SELECT [Location\_key],[street],[city],[state],[country]

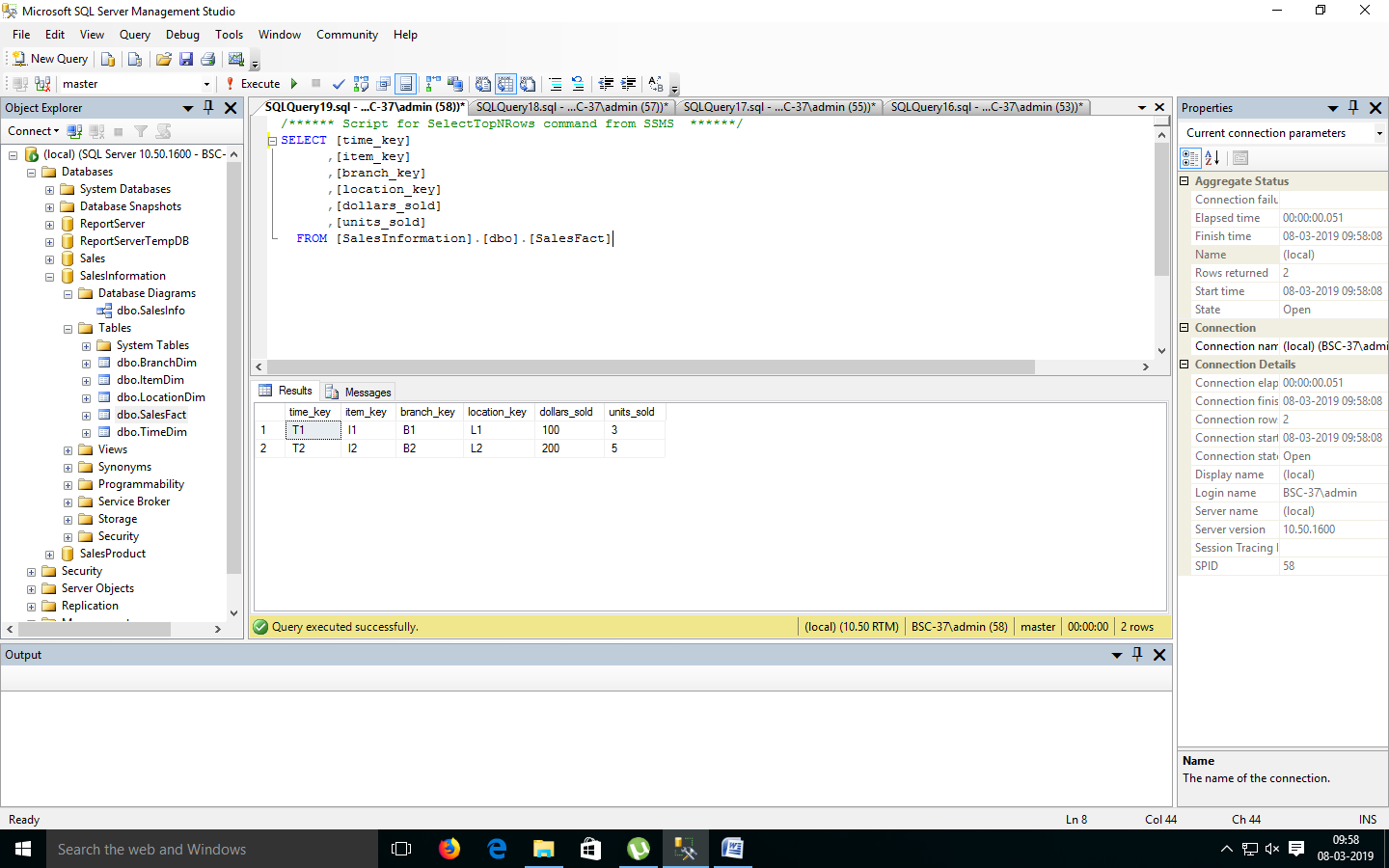
FROM [SalesInformation].[dbo].[LocationDim]

****

**3.4.** SELECT [time\_key],[item\_key],[branch\_key],[location\_key]

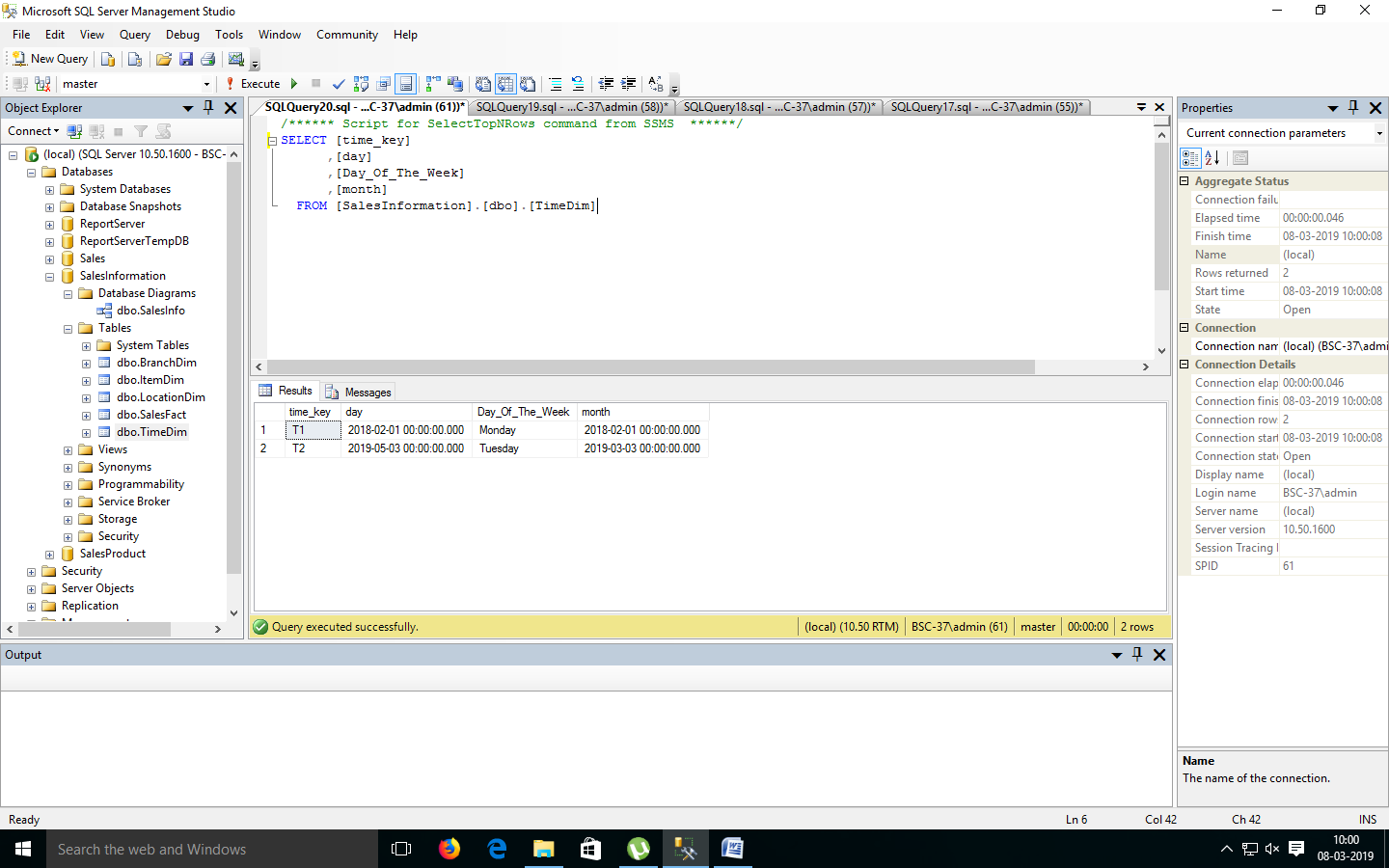
,[dollars\_sold],[units\_sold]

FROM [SalesInformation].[dbo].[SalesFact]

****

**3.5.** SELECT [time\_key],[day],[Day\_Of\_The\_Week],[month]

FROM [SalesInformation].[dbo].[TimeDim]

****

**3.6.** SELECT [SalesInformation].[dbo].[BranchDim].[Branch\_Key],

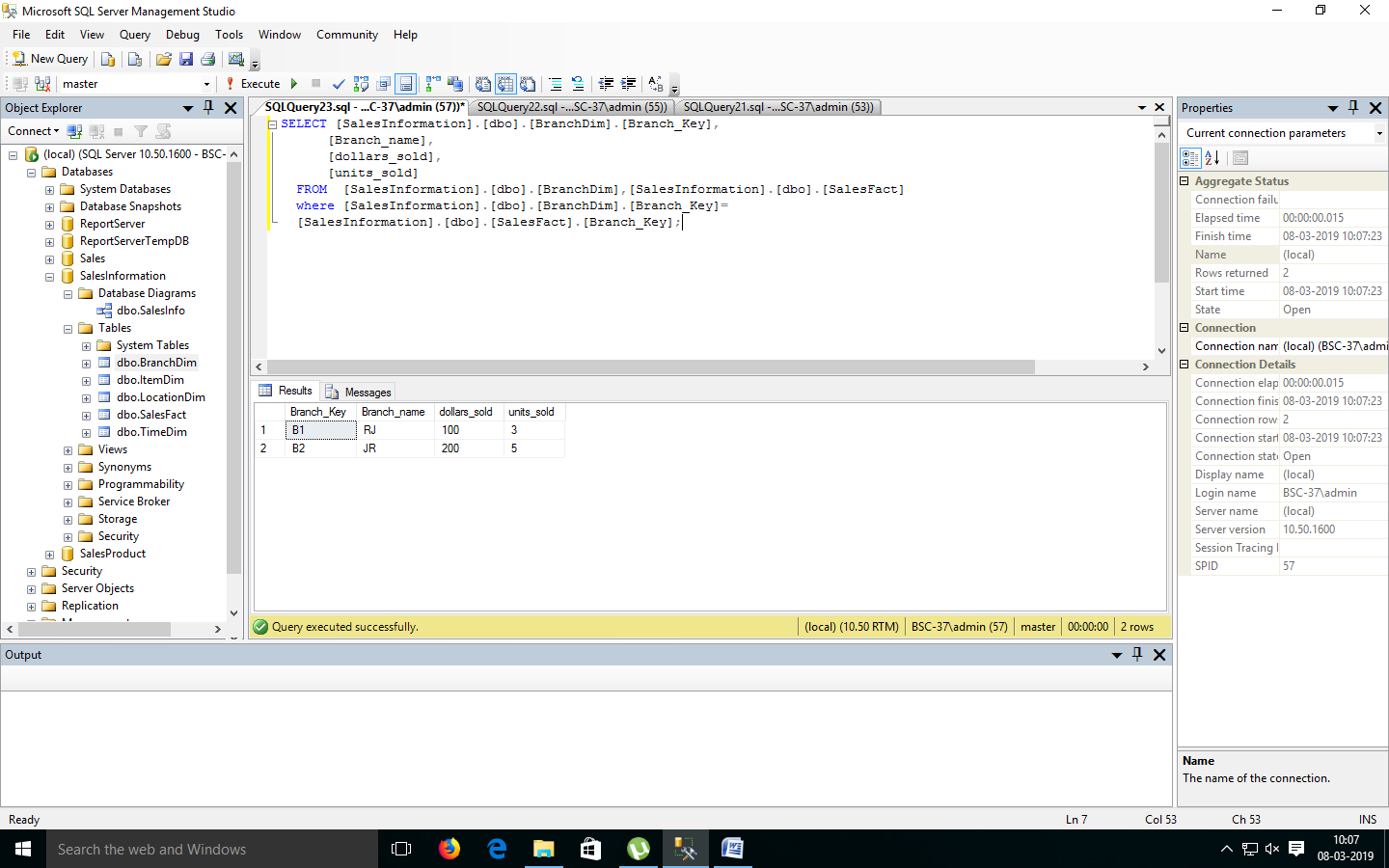
[Branch\_name],[dollars\_sold],[units\_sold]

FROM [SalesInformation].[dbo].[BranchDim],

[SalesInformation].[dbo].[SalesFact]

where [SalesInformation].[dbo].[BranchDim].[Branch\_Key]=

[SalesInformation].[dbo].[SalesFact].[Branch\_Key];

****

**3.7.** SELECT [SalesInformation].[dbo].[ItemDim].[Item\_Key],[item\_Name]

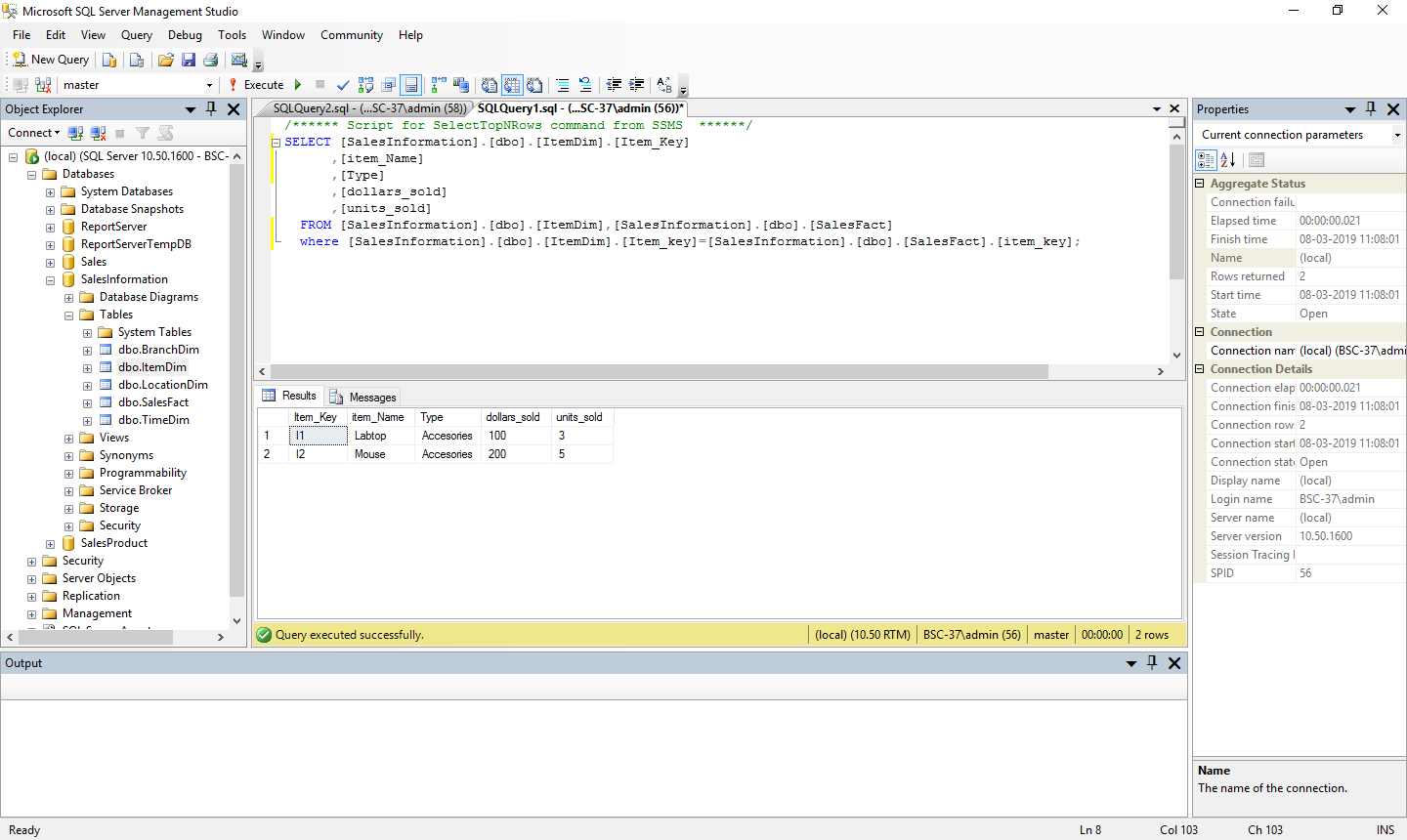
,[Type],[dollars\_sold],[units\_sold]

FROM [SalesInformation].[dbo].[ItemDim],

[SalesInformation].[dbo].[SalesFact]

Where [SalesInformation].[dbo].[ItemDim].[Item\_key]=

[SalesInformation].[dbo].[SalesFact].[item\_key];

****

**3.8.** SELECT [SalesInformation].[dbo].[LocationDim].[Location\_key]

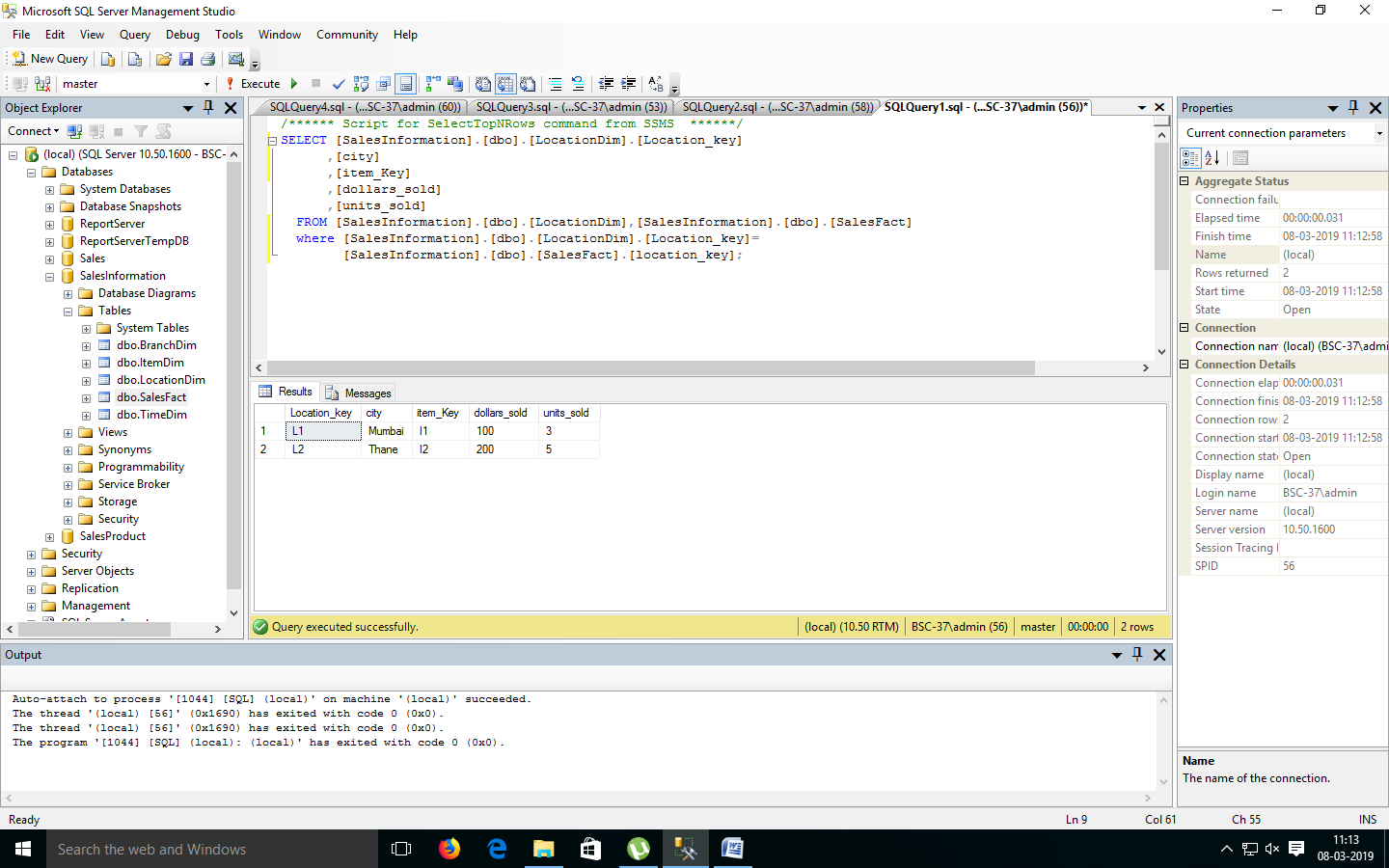
,[city],[item\_Key],[dollars\_sold],[units\_sold]

FROM [SalesInformation].[dbo].[LocationDim],

[SalesInformation].[dbo].[SalesFact]

where [SalesInformation].[dbo].[LocationDim].[Location\_key]=

[SalesInformation].[dbo].[SalesFact].[location\_key];

****